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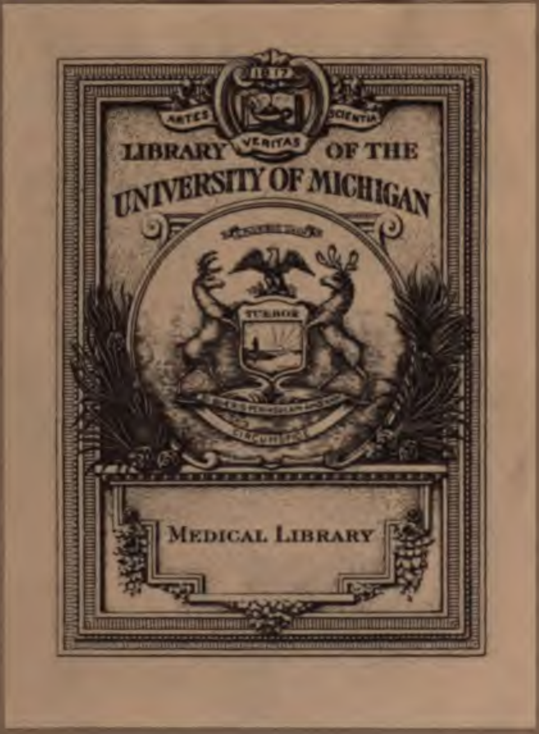
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THE
NORTH AMERICAN
MEDICAL AND SURGICAL
JOURNAL.

CONDUCTED BY
HUGH L. HODGE, M. D. | CHAS. D. MEIGS, M. D.
FRANKLIN BACHE, M. D. | B. H. COATES, M. D.
AND
R. LA ROCHE, M. D.

NON DOCTIOR, SED MELIORE IMBUTUS DOCTRINA.

VOL. I.

PHILADELPHIA:
PUBLISHED BY J. DOBSON, AGENT.
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1826.

Eastern District of Pennsylvania, to wit:

BE IT REMEMBERED, that on the 31st day of March, in the 50th year of the Independence of the United States of America, A. D. 1826, Hugh L. Hodge, Franklin Bache, Charles D. Meigs, Benjamin H. Coates, and René La Roche, of the said District, have deposited in this office the Title of a Book, the right whereof they claim as Proprietors, in the words following, to wit:

"*The North American Medical and Surgical Journal. Conducted by Hugh L. Hodge, M. D., Franklin Bache, M. D., Chas. D. Meigs, M. D., B. H. Coates, M. D., and R. La Roche, M. D. Non doctior, sed meliore imbutus doctrina. Vol. I.*"

In conformity to the act of Congress of the United States, intituled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned;"—and also to the act, entitled, "An act supplementary to an act, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned," and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL, Clerk of the Eastern District of
Pennsylvania.

ADDRESS TO READERS,

ON THE COMPLETION OF THE FIRST VOLUME.

The Editors of the North American Medical and Surgical Journal, having completed the first volume of the work, have great satisfaction in finding, that their labours, so far, have met with the approbation of the medical public. That this is the case, may be fai[illegible] inferred from the large share of patronage, which the work has received in the short period of three months from its commencement.

The Editors entertain a strong hope, that they shall be able, as they proceed in their duties, to render the publication more and more worthy of the support of the profession. In the commencement of such an enterprise, many difficulties are necessarily encountered, which are not incident to it in its progress.

The department of Original Papers, it is believed, has fully redeemed the pledge, given by the Editors in the prospectus, that their coadjutors were numerous and respectable. Without, indeed, the cooperation of a considerable number of their medical brethren, pledged to the support of the work, they would not have embarked in the arduous undertaking of increasing the list of medical journals, already numerous in the United States.

The department of Medical Literature having been favourably received, the Editors are confirmed in their original opinion as to its importance. They are, therefore, determined to continue it, and will employ their best efforts to render it worthy of increasing approbation.

As the object of the Editors, in the preparation of the Quarterly Summary, has been to give the spirit of the foreign and domestic journals, apart from the uninteresting details, which are so frequently interwoven with the relations of the most important facts, they have rejected, for the most part, the plan of making mere excerpts, and adopted that of preparing a condensed abstract of their principal contents, accompanied by occasional remarks. By adopting this course, a larger portion of interesting matter can be compressed into a given space, and consequently a much fuller view be presented of the current improvements in Medicine and Surgery.

In conclusion, it only remains for the Editors to reiterate their determination to spare no pains to render the NORTH AMERICAN MEDICAL AND SURGICAL JOURNAL, worthy of the support of their medical brethren.

PHILADELPHIA, April 1, 1826.

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THE

NORTH AMERICAN

Medical and Surgical Journal.

JANUARY, 1826.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Description of a febrile disease which lately prevailed epidemically among the Negroes of the Rice plantations, in the vicinity of the city of Savannah. By* WILLIAM R. WARING, M. D. *of Savannah, Georgia.*

THE interesting disease which forms the subject of the present essay, appeared, as I am told, about the middle of the last winter, at the plantation of Robert Smith, Esq. on the Carolina shore of the Savannah. A short time after, it commenced its ravages on the opposite Georgia margin of the river, at a place belonging to John P. Williamson; towards the last of March it attacked the negroes of John Potter, at Coleraine; in April, those of the late Robert Mackay, and in March or April, a few cases occurred at the plantation of Judge Wayne, but without extending further. These plantations occupy a very small compass of country, and are within short distances of each other; the grounds of which they are constituted, are chiefly marshes or swamps, rescued from the river by dykes, and lie below the level of the flood tides. In some instances there are contiguous lands, which have a greater elevation; and these are selected for the establishment of negro houses. In other instances, there are none such, and then sites are adapted for that purpose, according to convenience, which are secured from ordinary inundation by proper embankments. The few white people that inhabit these plantations throughout the whole year, are the victims of gastric and hepatic inflammation, and exhibit a physiognomy of person like those of the Italian marshes and Campagna. But, singular as it may appear, the black population, when it is well treated, well fed, and clothed, is far from being unhealthy. Instances of extraordinary longevity are numerous; and the diseases which occur are generally pneumonic, and result from winter. The negro does not appear to be as much subject to the effect of summer's heat or of common autumnal miasmata, as the white man. But he is more easily affected by cold, and seems to be more frequently attacked by epidemic phlegmasiæ in cold weather. These phlegmasiæ undoubtedly originate in some atmospherical quality, not sensible merely, but insensible also; because they are prolonged through all sorts of weather, and season, and temperature. It is probable that this quality is a vegetable miasma also; but since it does not produce the ordinary morbid effect, and since indeed the negro is not very liable to the ordinary morbid effect, we are to infer that it is a peculiar modification of it, or that its operation is rendered more intense by an augmented sensibility. It must, however, be the one or the other, as is sufficiently evident, and as I hope to make it appear in the present instance.

About the close of May, some patients affected with the epidemic, were brought from the plantations, for the convenience of medical attendance, to Savannah, and placed in a house situated upon Broughton street: but the inhabitants becoming alarmed at this introduction of a novel disease among them, remonstrated with the municipal authority, and they were re-conveyed into the country. They could not have remained in the city more than twenty-four hours. A few days after this occurrence, a negro belonging to a Mrs. Bellinger, in a yard adjacent, and another, the property of a Mrs. Davidson, her daughter, who, from the community of families, was in the habit of frequenting that yard, were simultaneously attacked by the disease. Both were located in the first instance at the dwelling of Mrs. Davidson, in a distant quarter of the town. But when the symptoms became sufficiently developed to distinguish the nature of the affection, this lady, having some fears of its being contagious, had them removed again to the yard of Mrs. Bellinger, who was absent. A black nurse was at first employed to attend them, but after a few days she contracted the disease also. A white woman was then hired to do this duty. After a short time had elapsed, she too sickened in the same manner. The white woman was carried and lodged in a house situated in a distant ward; and there again an individual of the family with whom she lodged, was slightly, but, I think, unequivocally, affected. During the month of April, Mr. Williamson brought the sick negroes from his plantation, and placed them in a house attached to the enclosure of his own residence in the city, in order that they might have the more efficient attentions of the physician. After a few days, a black man who waited in his family, and a girl employed in his yard, were violently seized. The man died, but the girl recovered. Neither of these persons had travelled beyond the precincts of the city, and could not have been exposed to the original causes in the country. All the nurses that were employed in this hospital successively took the disease. Of ten nurses employed on the plantation of Mr. Patton, nine contracted it. When it obtained footing in any house, it spread through the individuals of that house more rapidly than among those not belonging to it. When it first made its appearance at Argyle plantation, it invaded the second house of a long line of dwellings. It then attacked the first and the third, and afterwards very regularly passed through the whole.

It affected some, two, three, and even four times; but the subsequent attacks were generally milder than the first. One attack, for the most part, secured the system against a repetition. These are remarkable facts, and are certainly quite enough to inspire a suspicion of contagion; but, on the other hand, no medical person has been affected by the disease, although many have been exposed. It has not been communicated out of Mr. Williamson's enclosure, although it is known that a free intercourse has constantly existed between the sick there and the negroes of the surrounding neighbourhood. Even the family of Mr. Williamson, at the distance of twenty steps only from the hospital, have entirely escaped. The sick were brought also from the plantation of Mr. Mackay, and placed in the enclosure of the residence of Mrs. Mackay; yet not an individual, either of the family or of the servants, has contracted the disease. The negroes of the Bellinger family have communicated it to no one, except the white nurse, although the opportunities have been numerous. The plantation of Mr. Read is contiguous to that of Mr. Potter, and not a case has occurred among his negroes. The plantation of Mr. Morell is bordering on that of Mr. Williamson, and his negroes have altogether escaped. That of Mr. Young is adjoined to Mr. Mackay's, and his have been equally fortunate. It is worthy of notice too, that the disease merely appeared for a short time at the Brampton plantation of Mr. Williamson, and after infecting a few negroes only, suddenly vanished. The number of the sick, as well as the number of deaths, has been variously proportioned at the different plantations. At Coleraine, three-fourths of the whole number of negroes, about four hundred, have been sick, and one-tenth of the sick have died. At Mr. Williamson's Clifton plantation, two-thirds, about one hundred and fifty, have been sick, and one-seventh of these have died. At Mr. Smith's plantation, one-fifth have been sick, and one-fourth of the sick have died. At Mr. Mackay's plantation, one-fourth have been sick, and one-tenth of these have perished. This diversity in the extent and mortality is not conformable to the characters of the established contagious diseases, such as small-pox, measles, scarlatina, &c.

If I have not been deceived in the facts, as I have stated them, and I have used some industry to collect them without mistake, it is evident that this epidemic has been produced, in the first instance, by a remote cause, founded in the local condition of the places where it has prevailed; and that, after it has been thus produced, it has proved contagious to a small extent, and under great limitations. In September, a storm from the sea, and a flood from the back country, occurred at the same time. They broke down the banks, inundated the plantations without exception, and swept away the crops of rice, which had been in a great degree harvested. A current, produced by north-east winds, brought those crops, together with an additional mass of other materials, from various directions, to the Georgia side of the river; and they were scattered over the surface of the soil, or deposited in heaps at different points. I have ascertained from Mr. Williamson, and the Superintendent of Mr. Potter, that this especially took place at Coleraine and Clifton, where the disease has raged most. The ditches and canals received the greatest quantities, because they were the lowest places. The destruction of trunks, the devastation of barriers, and the continued succession of freshets, rendered it impossible to cleanse them; and they became laboratories of a decomposition disgusting and offensive, until the spring had considerably advanced. Such has been the general contamination of the earth, that in some instances, where it has been irrigated for the benefit of the new crop, it has suddenly emitted an odour so intolerable, that the cultivator has been obliged to drain off the water, and renew the flowing. This offensiveness of the fields, though a common state, is not usually striking to the individuals who reside upon them throughout the year. But during the last three or four months, it has been so extraordinary as to furnish subject of complaint even to them. It has not been merely owing to the vegetable accumulation, but also to the singularly high temperature of the winter months. The process of putrefaction has been promoted by a grade of heat which is extremely rare in this country at that season of the year. Our degree of cold is never very intense. It is ordinarily sufficient, however, for a short space, to check the sensible march of vegetable and animal decompositions. But such has been the unseasonable temperature, that it is probable, in the whole interval of time between the first day of December, and the last day of February, there was not a week which was certainly equal to this effect.

Possessed, then, of the facts of the decomposable accumulations on certain places,—of the existence of a temperature fitted to facilitate their decomposition,—of the decomposition really occurring in a degree cognizable even by the sense,—of the concurrence of the decomposition and the disease; and knowing, withal, the common origin and morbid effect of miasmata, is it not just to conclude that they have constituted the first remote cause of the epidemic? If it had been produced by any sensible quality of the air, as heat, cold, moisture, or any of their combinations, it must have been general, and neighbouring plantations must have been equally affected. In addition to this consideration, those sensible qualities must have been striking and extraordinary, and fitted for such an effect by their known operation.

A few persons attribute, very erroneously, the disease to a diet of damaged corn or rice; and the example of Mr. Smith's negroes is adduced to sustain that opinion. The example, however, proves nothing; for I am told that those negroes continued to sicken for a length of time after their food had been changed. Those who have suspected a damaged rice, suppose that in some cases it was allowed as the ordinary ration; and in others, that it was clandestinely collected, and eaten, after having been washed up by the storm. They suppose its effect has been poisonous, like that of ergot. This is the opinion of a physician. But he forgets, that a rice ergotted must have been subject to a malady in its growth, and that the crop of 1824 had been matured prior to the storm. Whatever injury was suffered by the rice of the last crop, could not have given to it that property; nor do I believe it gave to it any of a deleterious sort. The facts, however, that the disease still continues, that its cause still operates, and that for some time it has been impossible for the subjects of it to procure any damaged rice, are certainly adequate arguments of refutation to this hypothesis.

That it has been contagious in some instances, I think there is sufficient reason to believe. The proofs stated, although not infallible, are as strong as those on which we build the most of our medical opinions. It is not a virulent contagion like that of small-pox. It is not so certainly communicable under all circumstances, nor indeed under any. A slight case will not propagate it; and even an extreme one appears to do so rarely. A constant exposure to its influence, when it has assumed its worst form, appears to be necessary for its communication. It may be more easily taken in one locality than another, and still more easily taken in the atmosphere of the original causes than elsewhere. These characteristics, although thus extremely narrowed, if peculiar at all, are peculiar in that only. The communicating matters of small-pox and other diseases of the same class, are, more or less, virulent, not only by their intrinsic constitution, but by the situation, the season and the circumstances. The vaccine matter is well known to become less powerful and less safe, as it recedes from the primary disease. Sporadic scarlatina does not spread, because it is not violent and virulent enough to produce effect. Syphilis is a milder disease in our day than it was two hundred years ago; it is, even at this moment, less contagious in cold than warm countries—on mountains than in plains. Whatever may be said in the dispute about contagion and non-contagion, by the different parties, it seems to me to be very certain that there are no fixed laws of communication which will embrace all communicable diseases. I think even that there are no fixed laws which will embrace the same communicable disease at all times. The only point which always preserves their individual or relative identity in this particular, is the sole fact of their being communicable. The contagion by contact or through a medium—the ultimate distance of its operation—its powers over the same constitution for one or many impressions—its degree of certainty to produce effect under various circumstances, are so irregular that it would be impossible, according to them alone, to decide whether any disease were communicable or not. Indeed, they are not to be considered as essential in an investigation, however auxiliary and explanatory they may be. Suppose no communicable disease had yet been known, except such only as possessed that property by contact. Should we have no contagions by mediation of the air? A rule founded in this way would be arbitrary, and absurd. We might as well conclude that every contagious disease, must have pustules on the skin because the small-pox presents itself in that shape. Or that small-pox must inflame the mucous membrane of the trachea because the whooping cough inflames it. It may be difficult to assign the exact laws of any specific contagion, and yet we may be quite assured of its existence. To ascertain such laws it becomes necessary to observe it under numerous and various circumstances. But to ascertain its existence, we demand but the clear fact of its propagation. It is indeed a curious phenomenon, that a miasm arising from putrefaction of any substance whatever, should have the power of continuing its influence through a series of animal systems. But it is curious at first glance only. For why should not a virus from this source possess that property as well as the product of a morbid process? We have but the fact at last in either case. Yet some are disposed, notwithstanding, to deny it in all diseases except such as can be traced to a product of that kind. These gentlemen are evidently ultra non-contagionists. They seem to forget that both syphilis and small-pox are modern diseases. I am no advocate, on slight grounds, for additions to the catalogue of contagions. But there are some, I believe, which, although armed but weakly with this property, nevertheless possess, and occasionally exert it, albeit they may not be entitled to a first rank in the nomenclature of such affections.

It is not easy to insulate and depict the simple pathology of any epidemic which runs a course of some months. Its character is so much modified or disguised by the weather, and succession of seasons; that it is difficult to individualise it. The winter implicates the organs of the chest, the summer those of the abdomen. If it be idiopathic of the lungs, by heat it involves the bowels—if idiopathic of the bowels, by cold it stretches its influence to the lungs. Thus it has been in the present instance. The epidemic originated from a miasma in February, and has undergone the effect of every vicissitude of temperature and season since that time. It will, consequently, be seen, that although it has persisted always to attack certain parts and to preserve its identity, it has, more or less, involved others, and in this way, produced a various, but formidable compound of disease. I now proceed to detail the symptoms, and shall endeavour to separate the essential from the nonessential as much as possible.

The patient complains for a day or two of lassitude and aching in the limbs. He is then attacked by pains in the head, stomach, or intestines, and sometimes in the chest. His strength is suddenly prostrated, his respiration hurried. A slight movement, even turning in bed, or an effort to speak, seems to exhaust him. Sudden flushings of heat frequently come over him; and at such times, he breathes more rapidly, and appears almost expiring. He has excruciating pains in the muscles of his extremities, and sometimes points to a spot, where he says they are particularly seated. A limb sometimes loses its voluntary motion; and if he be required to turn, he either moves it with his own hand, or he needs the nurse to move it for him. He has tremors, subsultus tendinum; his tongue trembles, and he utters with difficulty, or is incapable of speech. The muscles of the pharynx are occasionally in part palsied, and the deglutition is impaired. As the disease advances, the nervous system becomes evidently more prominently irritated. The countenance grows wild or stupid; the involuntary movements more considerable, and the strength more reduced. The patient is delirious, mutters and catches at imaginary objects, picks the bed-clothes, and frequently becomes entirely deaf. He is mentally uneasy, fancies that he is not in his own house, and insists on going home. He finally falls into a state of profound stupor. The skin in some instances is constantly heated; in others, it is heated by paroxysms; while in a great number, it is either preternaturally cool, or preserves its usual temperature, from the commencement until the approach of death. It is generally dry; but sometimes clammy perspirations appear on the face, neck, or extremities. There are no regular periods of sweating.

The circulation is variously affected. The heart sometimes flutters; it is irregular in the force and the interval of the stroke; at other times it is regular in both. Occasionally, it is preternaturally slow. I have seen it beat not more than forty-four strokes in the minute; and not more than fifty for ten days together. In a majority of cases the patient has fever, which is marked by periodical exacerbation and remission. In others he has fever without regular periods, fever continued; and sometimes he is without any fever at all. The artery at the wrist pulsates in correspondence with the action of the heart. It is full and strong, with or without frequency. It is weak, slow, and scarcely perceptible. It is small, tense, and thread-like, with quickness and frequency. It is full, soft, and slow. But I have seen a patient whose circulation went on as usual, whose skin had a universal natural degree of heat, whose tongue was moist and clear, who was without thirst or pain, and who exhibited no evidence of disease, except an extreme prostration, a hurry in the breathing after an exertion, and some tardiness of comprehension. There are cases of this disease which remit without fever. The exacerbation is evinced by oppression of stomach, pain of head, and general uneasiness.

The tongue, variously affected, like the pulse, is sometimes moist and clean; at others, it is covered with a long white or dark fur. But its general appearance is a leaden-white, at some distance from the point. It is commonly moist, though sometimes it becomes dry and rough. Occasionally the edges have a fiery red aspect. There is rarely much thirst at any stage. The foul tongue is connected with the accelerated circulation. The clean, moist tongue with its slow or unfevered state. At the commencement of the epidemic, the contents of the chest were frequently implicated. The patient had cough, and pain under the ribs. This affection often amounted to peripneumony, and he expectorated mucus with blood. The cough was sometimes incessant. This peripneumonic state was accompanied by the ordinary tumultuary pulse, but the prostration of muscle was greater than it is in common inflammatory engorgement of the lungs. Since the warm weather of May and June, the thoracic affections are become comparatively rare; and even in the cases of their occurrence, they seem to have been frequently consecutive or sympathetic. Sometimes there is only a slight cough, which is the effect of gastric irritation exclusively, and may be excited at pleasure, by pressing the stomach. The rareness of the pectoral irritation, after the recession of cold weather, produces a conviction that it is to be imputed more to the accidental effect of this cause, than to the insensible virus of the prevailing disease. Yet, as it still continues to occur, and occurs, too, primitively, it must be considered as a constituent, though not a uniform feature of the disease.

The stomach and intestines have been jointly or separately affected, without exception. This is ascertained by the touch. Frequently there is most sensibility in the region of the former; but, generally, it is greatest in the region of the latter. The sensibility of the stomach is, for the most part, just under the diaphragm, and about the seat of the cardia. The affection of these parts is not *perceptibly* constant throughout the disease, although it is undoubtedly so. The pain sometimes becomes suppressed, after a few days. This singular phenomenon appears to depend on the condition of the nervous system; for it takes place only when that is evidently and profoundly involved. The patient has a torpor, an inertness about him, complains of nothing: the sensibility seems to be overwhelmed, although the intelligence may be perfect. The mind is cut off from the body, and ceases to take cognizance of its derangements. He gets up from his bed, perhaps seats himself on a chair, and asserts that he is well; or he places himself at the bedside of another patient, for the purpose of brushing or fanning him. May not this state resemble that which is produced by a dose of opium, in certain cases of acute inflammatory pain, where the inconvenience is suspended, while the inflammation still not only exists, but may even be aggravated? The sensibility of the stomach is sometimes so extreme, that the mere weight of the hand is insupportable. I thought, in one instance, that it must depend in some measure upon the state of the skin; but a more minute examination convinced me that I had been mistaken. Notwithstanding the exalted sensibility of these viscera, which are so generally connected with the vital organs, the patient is frequently without any evidence of irritation of the heart. The pulse beats its ordinary rate, or it is even more inactive than it should be. Is this curtailment of the usual influence of the stomach and intestines over the heart, another effect of the irritation and oppression of the nervous system? Is not the diminished action of this organ, or the non-increase of action to which it is subjected, an effect similar to that which is produced by this irritation on the muscular power in general? Is not the nervous system disabled from performing its function of transmitting the sympathies, as any other part is disabled from doing its office, by inflammation? Irritate much an eye, and its vision becomes impaired; the mouth and the taste is either lost or perverted; the Schneiderian membrane, and the sense of odors is suppressed; a muscle, and its energy of contraction is diminished.

When the small intestines are affected, there is generally an acute sensibility about the region of the umbilicus. The patient is either constipated, and medicines purge him with difficulty, or he contracts a diarrhœa, and is sufficiently evacuated without them. There is sometimes accumulation of air, and the abdomen is extremely distended. At other times, there seems to be accumulation without distension; and if the fingers be pressed along the bowels, a singular cracking sensation is produced, by the escape of air from one portion of the intestinal cylinder to another. The discharges per anum are excessively bilious, particularly since the warm weather commenced. They are sometimes black and fœtid, and are occasionally accompanied by great quantities of worms. The lymphatic system has, in a few instances, been complicated with this disease. There have been several cases of parotid and inguinal tumours, which have terminated by resolution. They have been too rare, however, to form a component part of it, and must be set down as accidents from peculiarity of structure.

When an attack proves fatal, the event generally takes place on the ninth day. Sometimes it takes place at a much earlier period; but in many instances, it is protracted for several weeks. If the patient recover, the morbid state does not suddenly disappear; he gradually improves into convalescence. There is no evidence of crisis. His progress to health is slow and tedious. Sometimes, at the end of two months his strength is not yet regained, and he is fatigued by small exertions. Dr. Cuyler informs me that he found the convalescence more rapid in all cases where the mouth had been affected by the mercurial treatment.

It is worthy of notice, that many of the symptoms of this disease bear a strong analogy to those of yellow fever. Nor is it a matter of surprise, since the same organs are sometimes idiopathically assailed. The pulmonic affection does not appertain to yellow fever, yet I have frequently seen it accompanied by a cough. It is but an irregular occurrence in this disease. In yellow fever, the nervous system is affected in a minor degree. In this disease it is affected predominantly. In yellow fever, the gastric affection is uniform; in this disease it is occasional. In yellow fever, the intestinal affection is occasional; in this disease it is uniform. In yellow fever, there is frequently a dysentric affection of the colon; in this disease there is none. In the one there is black vomit; in the other there is seldom any vomiting at all. Yet, notwithstanding these differences, there are cases of both diseases, which approximate so much to an exact similitude, as to justify the parallel. There is, in both, a similar affection of the nervous system, of the stomach, and the small intestines. They are not violent, nor mortal, in the same degree; and it is probable that much of the difference of symptoms between them results, also, from that source.

The following cases of morbid anatomy, which I shall now proceed to describe, will serve to explain the symptoms which have been recounted, and to complete the pathology of the disease. They are imperfect, so far as concerns the condition of the medulla spinalis. This omission is to be regretted, because that condition is important for the illustration: but it was unavoidable. And, although there can scarcely be a doubt that it participated in the morbid state of the brain, it would have been more satisfactory to have certified it by inspection.

Case 1.—The woman Lucretia, aged fifteen years, was attacked on the 25th of June, by a pain in the head, bowels, and chest. Her tongue soon became furred, her eyes inflamed, and her skin hot. Her pulse was small, tense, and frequent; and, alternately, augmented in the day, and remitted at night. Her strength was prostrate; her respiration hurried; she coughed frequently, and trembled much. During the exacerbation, the intellect was disordered; but in the remission, she recovered her understanding. As the disease advanced, the pain of bowels and chest diminished; the cough and hurried breathing increased. The nervous affections became predominant. The mind was permanently deranged; she muttered incessantly, mistook and imagined objects, picked the bed-clothes. The extremities became cool, the pulse feeble, and the cough suppressed. She died on the 15th of July.

Dissection, twelve hours after death.—In the cavity of the cranium, the brain and its membranes presented sufficient marks of disease to account for the nervous symptoms. The dura mater was sound; the arachnoid was ash-coloured, where it passes over the fissures of the convolutions; the pia mater was extremely reddened with injected blood. The surfaces of the ventricles were beautifully striated with numerous vessels of a scarlet colour. They contained little serum; but it had, probably, escaped to the basis of the brain, where the deposit was considerable. When a section of the substance of the brain itself was made, the surface poured out blood from great numbers of minute vessels. In the cavities of the chest, the traces of disease were still more conspicuous. The left lung was sound, as well as the pleura of that side. The inferior portion of the right lung was engorged almost to hepatization. The pleura, in general, of that side was inflamed; but the redness was most intense in the covering of the engorged part of the lung, and in the covering of the diaphragm. There was a small deposit of serum and coagulated lymph in its cavity. The external coat of the pericardium was much reddened; the internal coat slightly. It contained a small quantity of serum. That portion of it which envelopes the heart, as well as the substance of the heart itself, appeared as usual. The ventricles were sound; the right contained some coagulated lymph. The semilunar valves were injected, and deeply coloured with blood. The internal coats of the aorta and pulmonary artery were tinged, though not so much, in the same manner. All the great vessels, as far as the head and extremities, presented a similar complexion. The auricles were as is ordinary. In the cavity of the abdomen, the peritonæum appeared sound. The liver and kidneys much engorged. The spleen of the natural size. The mucous membrane of the stomach exhibited no vestige of disease; that of the small intestines presented a deep red colour throughout. The colour was not altered in any manner. The mucus coat of the bladder was bright red, and thickened in spots. These spots were tough and yellow.

Case 2.—The man Jack was seized on the 13th of June, with pain in the head and bowels. He had active circulation, hot skin, thirst, hurried respiration, and was suddenly prostrated. His abdomen was extremely sensitive to the touch. The hot skin and active circulation periodically remitted, at first; but they soon became continued. The tongue, at first white, gradually assumed a dark brown appearance. The pulse, from having been full and bounding, became small, tense, and frequent. He fell into delirium, muttered, picked the bed-clothes, was uncontrollably restless, had subsultus tendinum, tremors; and sunk, finally, into stupor. He died on the 22d of the same month.

Dissection, eighteen hours after death.—Putrefaction of the body but little advanced, notwithstanding the warm weather of a summer's day. In the cavity of the cranium, the dura mater and arachnoid membranes sound. The vessels of the pia mater much engorged with blood. A surface, made by cutting away a portion of the brain, became crowded with red spots. The ventricles contained but a small quantity of serum. In the cavity of the chest, the pleura of both lungs adhered to that of the ribs; but it seemed to have been the effect of a former disease. The lungs themselves were perfectly sound. The pericardium appeared as usual, and contained very little serum. The external surface and the parenchyma of the heart presented nothing remarkable. The semilunar valves, including a small extent of the internal membrane of the ventricles, were injected with blood, and deeply coloured. The serous and fibrous coats of the aorta, down to the bifurcation of the primitive iliacs, of the arteria innominata, the subclavian, the carotid, and of the pulmonary artery up to the lungs, presented a violet appearance. The arteries of the extremities were exempt from it. In the abdomen, the peritonæal tunic, the liver, the spleen, the pancreas, kidneys, and bladder, exhibited nothing worthy of notice. The mucous coats of the stomach, jejunum, and ilium, were more or less deeply reddened. The colon appeared as usual. The cardia, and great curvature of the stomach, were most intensely discoloured.

By a comparison of these two cases, it may be remarked, that no important difference existed in the morbid conditions of the brain; nor was there any important difference in the symptoms evidently produced by those conditions. Not so in the conditions of the viscera of the chest. In the one, the lungs, with the heart and its pericardium, were sound; in the other, the right lung was engorged, and the pericardium reddened. In the one, the pleura was sound, and contained nothing; in the other, it was reddened, and contained serum and coagulated lymph. In the one, the semilunar valves, a small extent of the inner coat of the ventricles, and the coats of the arteries, were much tinged; in the other, slightly. Accordingly, and by consequence, there was great discrepancy in the symptoms. In the one, there was hurried respiration alone; in the other, hurried respiration, constant cough, and pain. To what cause shall we assign the hurried respiration, in the case of sound lung, and in many other cases, in which it was unaccompanied by cough or pain? To the same nervous irritation and oppression, I conceive, which occasioned the prostration of the voluntary muscles, and interrupted the sympathetic communication between the heart and the stomach. The blood was imperfectly decarbonized, by a defect of nervous influence, in some measure, like the effect of dividing the eighth pair. There was considerable difference in the conditions of the parts of the abdomen, also. In one, the liver, kidneys, and bladder, were sound; in the other, much injected with blood. In the first, the mucous coats of the stomach and small intestines were reddened; in the second, that of the small intestines only. The difference of symptoms, however, was not very remarkable. A general sensibility by pressure, at the beginning, in both cases; its suppression towards the termination. Perhaps, more pain was felt in the one than the other, at the epigastrium. The affection of the valves and arterial coats, was a little different in degree only.

What particular indications, if any, might be ascribed to it, I am not able to say. I have examined three victims to this disease, and in all have I observed this remarkable appearance. The colour, I have said, was violet. According to Lænnec, there is sometimes a bright red state of the inner coats of the arteries, which he suspects to be inflammatory; but the violet, he attributes to passive congestion. He is chiefly governed by the colour, in the adoption of this opinion; which is clearly a most uncertain mode of determining whether a part be inflamed or not. Besides, it is well known that the violet tinge is left on the inner coat of an artery, after the application of a ligature; and it could scarcely be doubted that this is the result of inflammation. The redness of the mucous coats, of the pleura, and the lung, of the brain and its appendages, might, with as much propriety, be ascribed to passive congestion. The colour was nearly the same in all; but that we are forced to impute it to irritation in these instances, I think, is evident.

First, From the pain in all these parts. RICHERAND says, that increased sensibility is the original symptom of inflammation. BOYER says, that pain is often the only revealing index of an internal inflammation. It certainly decides, for the most part, the existence of hepatitis, pleuritis, &c. When a fixed pain is felt for some time in the kidney, the liver, the lung, we attribute it to chronic inflammation or irritation. It is frequently our only concluding principle, and we rest on it with confidence. But if, after the pain, the autopsia prove a sanguineous accumulation, we do not hesitate to pronounce the state which produced it, inflammatory, and not passive.

Second, From the incontestible evidences of inflammation of the pleura, in the deposit of serum and coagulated lymph within its cavity. The exudation of coagulable lymph from a serous membrane, is never the consequence of a reduced action of its capillaries.

Third, From the inconsistent manner in which this redness was spread, with that which it ought to present in passive congestion. When the circulation is weakened from any cause, the blood will accumulate in the capillaries of depending parts. If a weakened man stand for a length of time, the capillaries of his feet will become distended with blood; and if the position be long enough preserved, there will be an effusion of serum in the cellular tissue. Now, the same thing must have occurred in the cases under discussion, if the capillaries had been incapable of sustaining the circulation. The blood, by the anastomosis, must have gravitated to the parts depending, and there would have been an irregular diffusion of the red colour corresponding with it. The patient being entirely supine, for some space previous to dissolution, we should expect to find the congestion of the head at the occiput; that of the pleura and lungs, at their posterior parts; that of the stomach, at the pylorus, and adjacent to the spine; that of the small intestines, in propinquity of the mesentery. But the examinations, on the contrary, have presented an equal distribution in the pia mater; a distribution irregular, but opposite to the depending parts, in the chest; a distribution to the great curvature and cardiac portion of the stomach, and not to the pylorus and the posterior portion; and, finally, a uniform diffusion in the small intestines, and not a partial one.

Fourth, A distinguished anatomist has asserted, that there are but two great causes of sanguineous accumulation in the capillaries. The one is, interruption to the current of blood in an arterial or venous trunk, from some cause or another; the other is irritation, or increased action. The interruptions are gravitation in a weakened part; pressure on a large blood vessel, as by aneurism; organic diseases of the heart, which embarrass the venous circulation; obstruction in the lungs to the passage of blood through the pulmonary artery. Now, the congestions, of which I speak, could not have arisen from any of these causes. Not gravitation, for the reason assigned; not pressure, for there was none; nor an organic disease of the heart, for it did not exist; not obstruction in the lungs, for in one case they were sound, and in the other, not sufficiently affected to produce that effect. They must then, consequently, have been the effect of irritation. There are two species of this state of the vessels. The first is exemplified in the phlegmon, which is seated in a strong tissue. The second, in the blister, which is made on a scorbutic surface, where the vessels are easily ruptured, and bleed by the slightest rudeness; where, prior to death, there are evidences of putrescency, and an incipient dissolution of both solids and fluids, and after death, a rapid decomposition. These two species of irritation differ from each other in degree only. In relation to the strength of fibre, they are equal. The first is an action above the ability of a part in sound tone; the second, an action above the ability of a part which, by some latent cause, has lost its tone. This last is what is mistaken by some for a passive congestion. But it is no more passive than the first; for it tends as much, perhaps more, to disorganization and death. Take a man whose constitution has been broken by debauchery or disease; his gums are tumid and purple, his breath is fœtid, his skin is soft and smooth, blood accumulates in the depending vessels. A small red spot appears on his back—it enlarges, becomes livid, mortifies; it is a carbuncle. Who would assert that carbuncle was not a disease of irritation, or that it consisted in mere passive congestion. On the other hand, instead of such a subject, select one in the vigour of health—a small tumour appears at the surface; it is red, enlarges, suppurates, and is rapidly cicatrized; it is a common phlegmon. What constitutes the difference between carbuncle and phlegmon in these cases? Not the disease, certainly—but clearly the character of the diseased part;—it is irritation, or increased action, in both cases. Now, the congestions which I am discussing, so far from being passive, are not even such as are associated with weak fibre; but phlegmonous, or such as are connected with strong fibre, not fragile, nor easily ruptured. There has been neither hæmorrhage, nor evidence of putrescency, nor rapid decomposition after death. All tends to convince us that both solids and fluids were in vigorous condition—every symptom before death, every appearance afterwards.

Fifth, The violet complexion is not a proof of passive congestion—first, Because the blood becomes frequently engorged and stagnant, around the point irritated, as in peripneumony; and it is blackened by the stasis, notwithstanding the inflammatory action. Second, Blood detained or embarrassed in the capillaries, becomes venous, of course, because it is the physiological function of these vessels to make it so. Third, The blood is found black even in the arteries, in all cases where the breathing ceases before the circulation. This happens by asphyxia, or lingering death, in which the blood traverses the lungs without benefit of air. In such cases, an inflamed part must be violet coloured, of consequence.

Sixth, Passive congestion cannot take place in a weakened and inactive capillary. This sort of vessel circulates the blood by its own independent effort. So that, when it acts strongly, it contains more blood, and when it acts weakly, it contains less. This is proved by a local inflammation of any kind, by the erection of the penis by injecting itself, and by the palsied limb, which perishes for want of capillary action, notwithstanding an augmented propulsion from the heart.

Seventh, The passive congestions being admitted, they are not competent to account for the heat of skin, the pain, the activity of the circulation. They are not competent to account for the disease. Congestion itself is nothing. The morbid state, if there be such, is a quality of the vessels in which the congestion is seated. Is this quality a passive state, is it mere debility? Prostrate a man by bleeding, reduce the action of the heart by the cold bath, until you cannot perceive the pulse at his wrist, yet he may be as free from disease as when all his faculties were in perfect vigour. The convalescent who cannot stand, may be as sound as before his malady. A part recovered from local inflammation is positively more fragile, it is weakened; its morbid character, is, nevertheless, completely removed. The morbid state is not, then, mere passiveness; nor is it congestion. It is something else; and it is that which produces the heat, the pain, the active circulation. Beside, congestion, when it occurs from a vascular interruption, in the stomach and intestines, &c. often indicates neither prostration nor irritation. I have seen an aneurism of the heart, which was connected with such a state of the mucous membrane of the stomach. The capillaries were glutted with blood, and must have been in that condition for some time. Yet, the patient had enjoyed good appetite, had been free from pain, or nausea; his skin had been cool, mouth moist, &c.; and death at last took place from suffocation, by disease of the heart alone. **Laennec** says, that this congestion of the mucous coat, which is a constant concomitant of organic affections of the heart, is more intense even than that which arises from gastritis; and yet, the patient experiences no inconvenience from the ingestion of wine, brandy, or the most stimulant substances. Indeed, it is not a disease, and produces none of its developments. But when a part thus subjected to congestion, becomes connected with a morbid state, that state is an irritation, so far as we know any thing about it. It is the ultimate point of our knowledge of the diseased action. It is what we treat exclusively in the majority of cases.

I have dwelt on these morbid appearances, because it is of the last consequence in the management of the disease. If they were the mere effects of debility, the practice by sedative or neutral remedies, would be wrong; and if, on the other hand, they resulted from inflammatory action, the general use of tonics and stimulants could not be right. I have shown, I think, that their origin was a superexcitement of the capillary vessels; and no matter what may be the reported success of any species of therapeutics, if it did not conform to that principle, it was erroneous. The value of remedies ought to be decided by the pathology of the disease, and not by the event. Every practitioner sums up his cures, and, although three-fourths may belong to the medicinal powers of the constitution, he monopolizes all. In regard to the deaths, he reverses his estimate; ascribes them to a virulence of malady beyond controul; and credits none to himself, however justly entitled to his quota. A multitude of medical men, it seems to me, prescribe with a pre-established conviction, that diseases must be mortal without medical interference. But I have no doubt, the majority are mastered by nature, when they are mastered at all; a few by the physician, and not a few in spite of him. For the truth of this, I appeal to every candid man of experience, who has gone the round of diseases, with the round of nostrums; the tonic, the stimulant, the sedative; or who, like the philosopher of Cos, has waited, and watched, and practised by expectation.

To settle the method of treatment by the treatment alone, is almost impossible. Sometimes, the disease is mortal under all circumstances; at others, it will not be mortal under any. There are cases beyond cure from the beginning; there are others destined to recover without the aid of art. How shall we distinguish them? The event evidently proves nothing. This is the great spring of dispute among us. One succeeds best with the bark; another, with blood-letting; another, with emetics; and another, with cathartics. Bourquin, of this city, a very reputable man, preferred to all other remedies, in autumnal fever, small and frequent bleeding from the arm. Grimes, a man of unquestionable talent, and, what is more than all, an anatomist, preferred cathartics, and seldom used his lancet. Proctor, a physician of the Edinburgh school, relied chiefly on salivation. Others, not wanting in respectability, condemn all these, and prefer tonics, with stimulants of the strongest character. I have observed these discordances every where. They have existed at all times—in England, France, Italy, Germany; among the ancient Greeks, Egyptians, Romans. The sedantia have been constantly arrayed against the stimulantia, until medicine has almost become a subject fit only for sarcasm or reproach.

The only mode by which such follies, such veritable empiricism, can be detected and quashed, is, to build up a pathology on the basis of the symptoms and dissections, and then to make it the rule of practice—a pathology, based not on the symptoms alone, nor on the dissections alone; but on both jointly. Not on the symptoms, because that would be nosological; not on the dissection, because that would be purely anatomical, and not medical. In this way, we should possess ourselves of the seat of the disease, of its nature, and its physiognomy; and the question of treatment would be narrowed to a point. Not that I would reject, altogether, the evidence resulting from experiment. It is necessary to establish a sound therapeutical method; but I would make it secondary and subordinate. If the disease were a phlegmasia, I would select my remedy from among the contra-stimulants. If I failed, I should not abandon my course immediately. I would modify, I would time differently, I would lessen or augment the quantities. If I were to lose nine cases out of ten, by pleuritic inflammation, I should not, on that account, condemn the antiphlogistic treatment. I would not apply stimulants to a phlegmon, to resolve it, though I had generally failed with emollients, sedatives, and derivatives. In desperate cases, in desperate èpidemics, where the event, under the rational plans, must be mortal, specifics and powerful repellents are admissible. It is even admissible to employ remedies of this complexion, in certain slight affections; as in moderate irritations of the pharynx, and autumnal fevers of a mild grade. They are gradually curable by the physiological treatment; but they may be cut short by revulsion. The slight remittent, which is produced by a sparse miasma in healthy seasons, is most quickly removed by active cathartics, which stimulate and disperse the irritation of the mucous coats of the stomach and bowels; but, except under such circumstances, the instructed physician will adhere to the pathology which he has made out, as his best and surest guide. When the excitement is great, he will attempt to reduce it, and not to repel it; for, in this case, he would not suppress, he would aggravate the evil.

Having established, then, by the symptoms and autopsia, that the disease was a superexcitement or irritation of the intestines or stomach, or both, in conjunction with irritation of the brain, and frequently with irritation of the organs and membranes of the chest, it follows, that the best remedies should be such as would reduce the excitement of the parts affected. Muscular debility, tranquil or diminished action of the heart, moderate temperature of the skin, do not furnish reasons to deter from the pursuit of this course. They are the common result of cephalic irritation, of intestinal and gastric irritation, and even of pneumonic irritation, where the parenchyma of the lungs is embarrassed. Accordingly, it has been found, that blood-letting, moderate evacuation from the bowels, external derivation by mustard and blisters, emollient applications, a diet of gruel and flaxseed tea, have proved the most successful remedies. They are the physiological remedies confirmed by the event. Blood-letting has been particularly useful in the pulmonic cases, and where the action of the heart and arteries was considerable. But where the great circulation was not implicated, or was weakened, its benefit has been doubtful. The first case of this disease, that I saw, had considerably advanced before it was submitted to medical attention. The peripneumony was the most prominent affection, the heart extremely active. Notwithstanding free and repeated abstractions of blood, the pulse appeared to me to be unabated, until near the close, which was fatal. In other instances, however, it has moderated the violence of the disease, and contributed to the cure. This remedy was most called for in February and March. Since that time, it has been seldom necessary, or even admissible. The warm weather induced more deposit in the intestinal tube, and made a reference to evacuants more requisite than they had been at an earlier period. In many instances, the bowels were constantly emptied by a slight diarrhœa, which served instead of medicine. But when that did not take place, such doses of castor oil were administered as sufficed to remove real collections with the least irritation. When that could be effected by injections, they were preferred, to avoid additional stimulation to the mucous coat. Where the intestinal irritation was extreme, and the abdomen distended with flatus, all evacuants, injections as well as medicines, were sometimes abandoned. Blisters and rubefacients were applied to the extremities, and in the region of all the irritated parts, to increase the external capillary excitement. A poultice, covering the whole abdomen, was found so agreeable to the patient, so composing to the nerves, that he would ask to have it, if it had not been ordered. When this course of treatment had removed the pains in the head, chest, and abdomen, and the patient suffered an extreme debility, tonics were employed with advantage. For this purpose, chamomile flowers and sulphate of quinine were preferred. In some instances, they produced feverish symptoms, and it was found necessary to lay them aside. Perhaps, it was only after the commencement of the real, as well as apparent convalescence, that they were certainly beneficial.

This treatment is extremely simple. It is that which has come under my own observation, and which has been completely successful in the hands of my friend Dr. Bartow. But he took the precaution, at the outset, of having every negro who was seized with the disease, brought immediately to the city; where, by his unceasing assiduity, he could enforce the exact execution of his method of practice. Other physicians have not enjoyed that advantage. They have been obliged to attend at a considerable distance, by a visit once a day; their nurses have been ignorant women, taken from the field; the remedies have been badly administered, if even they have been administered at all. In this way, they tried every species of treatment, the tonic, stimulant, depleting; and the mortality was great under all. A physician who sees his patient for ten minutes, once a day, cannot judge of the variations in the progress of the disease; he cannot prescribe according to those variations; he cannot estimate the strength of the system, in exacerbation and remission; he cannot graduate his doses; he cannot meet with promptitude the exigencies which occur; and, lastly, he cannot, without intelligent and faithful attendants, have an assurance that his directions are pursued. It is, no doubt, to all these causes, that we are, in a great measure, to ascribe the greater ravages of the disease under the management of the physicians who visited in the country. Embarrassed by such difficulties, it is impossible for them to assert, at this moment, what remedies were proper, if experience is to be a guide in the formation of an opinion. It is much to be regretted, also, that a considerable time had elapsed, after the invasion of the epidemic, before these gentlemen had executed a single morbid dissection. Had they done so in the first instance, they would not have groped in the dark. They would have been able to establish a pathology of the disease, which would have sustained them in a firm course, and would not have allowed them to be shaken by the uncertain rule of the event alone. In consequence of this omission, bark, wine, brandy, turpentine, opium, &c. &c. were successively employed without advantage. For, how can it be supposed for a moment, that such medicines would have been administered, after detecting, by the inspection, an inflammation of so many vital parts. Notwithstanding the appearances of debility which presented themselves, they would have refrained from those excitants, under the conviction, that the former were purely symptomatic, and that they did not arise from the real and intimate destruction of the stamina of the constitution.

ARTICLE II.—*Observations on a peculiar Catarrhal complaint in Children.* By JOSEPH PARRISH, M. D. *Surgeon to the Pennsylvania Hospital.*

IN the course of my practice, I have met with frequent instances of a catarrhal affection, among infants; which, though bearing in its prominent symptoms a close resemblance to ordinary catarrh, is yet very different in the treatment which it demands. As it sometimes assumes an extremely dangerous character, it becomes important to distinguish it, and correctly to understand the practical indications which it presents.

The child is affected with cough and difficult respiration; and the pulse, on examination, is generally found to be more frequent than natural. Sometimes, even a degree of febrile excitement is presented, which, with the extreme difficulty of breathing, is apt to convey to the young practitioner the idea of inflammation in the lungs. But active antiphlogistic measures, so far from affording relief, are calculated to aggravate the alarming symptoms. It is not easy to point out any decided marks by which these cases may, in every instance, be certainly distinguished. I have generally observed, that the dyspnœa, though constant to a greater or less degree, is much more violent at one time than at another, assuming an irregular paroxysmal form; and the paroxysm bears a great resemblance to that of a patient labouring under asthma. The pulse, as before stated, has commonly more than its natural frequency; but it possesses little force, and is rather a pulse of irritation than of inflammatory action: in most instances it may be said to be feeble. In the severer cases, the skin becomes cold, the countenance shrinks, and unequivocal symptoms of debility are observable. A *cold cheek* is a frequent accompaniment of the disease; and sometimes occurs, when the rest of the surface is naturally, or even more than naturally warm. This I regard as one of the best diagnostic symptoms; at least, it indicates a want of action in the system, and is sufficient to guard the practitioner against the danger of hastily inferring the existence of inflammation. In the pulmonary complaints of children, I am much in the habit of laying my hand on the cheek, to ascertain its temperature; and if I find it cold, (not *cool* merely, but actually *cold*,) I consider the patient in a situation so critical as to demand very close attention. By the symptoms above described, the majority of these cases may be distinguished without much difficulty: but instances occasionally occur, in which the resemblance to catarrh, in its inflammatory form, is so close, that we can with difficulty discriminate them in any other way than by the effect of the treatment. In such instances, it is of great advantage to call in the aid of collateral facts; as, for example, the result of other similar cases in the same family; and thus avail ourselves of that similarity of constitution which is so apt to prevail among the children of the same parents. An illustration of this principle will be afforded in the detail which I shall give of the complaint, as it came under my notice in the family of John H. Cresson.

As to the nature of the disease, I believe it to be catarrhal, as I have known it to occur when catarrhal fever prevailed among children; but the dyspnœa which forms so prominent a symptom, is undoubtedly of a spasmodic character; and, together with the disposition to sink, which is often observable, probably depends on a constitutional debility of the respiratory organs. We have in the complaint an interesting exemplification of the fact, that the same cause may, in persons of different constitutions, produce diseases requiring opposite plans of treatment.

My favourite remedies in the cases I have described, are the antispasmodics and expectorants. Assafœtida is peculiarly beneficial. I generally direct one drachm of the gum-resin to be rubbed up with an ounce of mint-water, and a teaspoonful of the mixture to be given every two hours. If this should be found too strong, I direct the mother to dilute it, till of such a strength as the child can bear, and to give a teaspoonful of the preparation thus diluted, for a dose. I scarcely ever met with a mother who could not readily graduate the strength of the article to the state of her infant. I also employ it in the form of enema, sometimes with the addition of a few drops of laudanum. I believe that assafœtida may in general be used very freely, with entire safety, in the spasmodic diseases of young children. Its exemption from any narcotic properties, enables the practitioner to give it in large and repeated doses, so as to keep up the requisite impression in cases of an urgent character.

The rectified oil of amber is another antispasmodic, to which I am particularly partial, and which I occasionally substitute for the assafœtida. Like this, it is free from any narcotic properties, and I believe is entitled to more attention than it generally receives. It may be given in the form of julap, with loaf sugar, gum arabic, and cinnamon water. I am much in the practice of using it externally, in the spasmodic diseases of infants. As a common formula for this purpose, to be prepared in families, I direct the oil of amber and laudanum, of each a teaspoonful, with sweet oil and brandy, of each a tablespoonful, to be beat into a liniment, with which the breast, and the back along the spine are to be freely bathed. I have even added oil of amber and laudanum to poultices, to be applied to the feet.

In the intermediate hour between the doses of assafœtida or oil of amber, I usually direct a decoction of senega; and if the symptoms are urgent, push it sometimes so far as to produce vomiting.

In conjunction with these remedies, the fumes of rosin are often highly beneficial. I have known them to be received with pleasure by the infant, and to produce an immediate improvement in the respiration. If their effect should not be salutary, the patient may easily be removed beyond their influence.

But I do not trust the case entirely to the antispasmodics and stimulating expectorants. I attend to the state of the bowels, and if opening medicine is required, direct castor oil. Blisters to the breast, and the warm bath, are also useful auxiliary remedies, and should not be neglected.

In order to illustrate the statements already made, and to exhibit the circumstances by which I was led to the adoption of my present practice, I will give an abstract of a few of the cases of this disease which have fallen under my notice.

I was called, in the morning of the 11th of the 7th month, 1810, to the infant daughter of Robert Burkhardt. I found her with difficult breathing, some cough, and a pulse moderately febrile. A few days before, she had been affected with diarrhœa, which had ceased spontaneously. Her gums being inflamed, I lanced them immediately; and conceiving that she might be relieved by a restoration of the diarrhœa, I directed castor oil. On a subsequent visit, about four hours afterwards, observing the respiration to be still more difficult, I took a small quantity of blood from the arm, and as the bowels had not yet been moved, prescribed a purge of calomel. I also directed antimonial wine in small doses. At the expiration of about three hours, I was sent for in great haste, and on my arrival, found her so exceedingly ill, that her friends believed her to be dying; and her appearance really justified their alarm. She was apparently insensible, with a respiration exceedingly laborious, a shrunk countenance, and a very feeble pulse. I should myself have despaired of the case, had I not known under what apparently hopeless circumstances infants sometimes recover. I ordered the warm bath, sinapisms to the feet, a large blister over the breast, and as the bowels still continued constipated, laxative injections containing assafœtida. But the remedy on which I chiefly relied, was assafœtida rubbed up with mint water, given frequently and in large doses. To the astonishment of every one who witnessed the case, my little patient perfectly recovered.

Another instance of the disease occurred to me subsequently, in the family of James Allinson. I was called in the night, on account of the sudden occurrence of extreme difficulty of breathing;

which I found to be accompanied with a pallid countenance, a cool skin, and languid circulation. The dyspnœa was not uniform; but occasionally remitted considerably, and then recurred with violence. I did not in this case employ the lancet. The treatment consisted, principally, in warm bathing, a large blister over the breast, attention to the bowels, and the liberal use of assafœtida, given by the mouth, and at night in the form of enema, combined with a few drops of laudanum. The volatile alkali was occasionally substituted for the assafœtida. After the alarming symptoms were thus subdued, a severe attack of cholic came on, which, however, yielded to mild measures, and the child was restored to health.

In the year 1815, in the family of John Suffrein, a barber, in Front street, I attended two other cases of the disease, of a very violent character. They presented the same general symptoms with those already described, and were particularly marked by the spasmodic respiration. I used the assafœtida, alternated with senega; and resorted also to the fumes of rosin. This last remedy proved exceedingly grateful to the little sufferers, and the improvement it occasioned in their respiration was obvious. Under the use of these measures, combined with gentle purging, the warm bath, and blisters, they both perfectly recovered.

Repeated opportunities of trying this plan of treatment have since occurred to me, and I have had every reason to be pleased with its efficacy. I believe that an opposite practice, founded on the opinion that the affection is of an inflammatory nature, would be productive of much more mischief than advantage.

It has before been observed, that the disease is sometimes indistinctly characterized. To exemplify this fact, as well as to show the great importance of forming a proper judgment, I will close this communication by giving a short notice of the complaint, as it occurred in the family of John H. Cresson, a respectable merchant of this city.

The parents of this family were most singularly afflicted in the loss of their children. They followed to the grave six sons in succession, all of whom died in early infancy, the oldest being only fourteen months, the youngest five. With one exception, they were all carried off by a peculiar catarrhal disease; and so fatal had this proved, that no sooner was a child attacked, than the parents considered it inevitably gone. Only a single instance of recovery had occurred, and this was in the case of a daughter, who had the complaint lightly, and passed through it without medical treatment. The three first fatal cases had been considered by the attending physicians as severe cases of inflammatory catarrh, and treated accordingly with active antiphlogistic measures. The fifth fell under my own care, and I had an opportunity of observing it from the commencement. Though convinced of the inutility of the antiphlogistic course pursued in the former cases, I could not still be certain that there was no inflammatory action in the lungs; and did not, therefore, adopt that active antispasmodic treatment which I afterwards found to be useful. The symptoms of the complaint were those of catarrhal fever, with cough, steady difficulty of breathing, and more apparent action than in the cases which I have before described. In the instance which came immediately under my own care, I had an opportunity of making an examination after death. On inspecting the lungs, I discovered not the least vestige of inflammation. There was some effusion into the bronchial tubes; but it was such as often occurs, not only where no inflammation has existed, but also in cases of extreme debility. From the result of this examination, I inferred that there was, in the pulmonary organs of these children, a debility, which both invited disease, and after its attack, prevented a return to healthy action. With this view, I concluded that some prophylactic treatment, calculated to invigorate the lungs, was all-important; and it occurred to me that this end might be answered by subjecting the surviving children, and those which might yet be born, to the action of the fumes of rosin, frequently applied. The parents were, accordingly, requested to put the plan in operation; they did so, and the children were made every day to inhale the resinous fumes. An infant son, born some time after the death of the last child, was, from its birth, subjected to this prophylactic treatment. In process of time, I was summoned to visit him, labouring under the terrible malady, and found him exceedingly ill. In the treatment, all idea of inflammation was laid aside, and the following plan adopted. The room was filled with the fumes of rosin; and the child was so much relieved by them, that he would play in them with apparent delight. A blister was at once applied to the breast, and the bowels were opened with castor oil; but I am inclined to believe, from what I have since seen, that a little time was lost in waiting for the operation of the medicine. After the bowels were opened, a mixture was prescribed, containing the rectified oil of amber and the tincture of balsam of Tolu, which was alternated with the decoction of senega. Each dose of the mixture contained about three drops of the oil of amber. This plan was steadily pursued, and I had every reason to be delighted with the result. The child perfectly recovered; and this was the first instance in which a son had passed through the disease.

After this, I attended, in the same complaint, two other children, both females, one of whom was extremely ill. In these, I immediately directed the decoction of senega, alternated with the oil of amber; and an obvious improvement took place in less than twenty-four hours. Similar auxiliary measures were pursued, as in the former case, and both children were in a short time restored to health.

Other instances of the disease have subsequently come under my notice, and I have now attended five cases in the family, all of which were treated on the same plan, and with the same success.

ARTICLE III.—*Account of a case in which an Ovarium was successfully extirpated, in a letter to a gentleman in Philadelphia.* By ALBAN G. SMITH, M. D. *of Danville, Kentucky.*

DEAR SIR,

WHEN I wrote to you last, I promised, so soon as my professional duties would admit, to send you some account of a case of a diseased and dropsical ovary, which I will now copy for you from my note book.

May 15th, 1823, I was requested by a gentleman in this neighbourhood to visit a negro woman, who, he said, had a tumour in her abdomen, of two years standing, which continued to grow, notwithstanding the efforts of various practitioners.

16th. Visited her, and found that she had a large tumour, which seemed to fill her whole abdomen, but was somewhat more elevated on the right side. Upon examination, per vaginam, the uterus appeared to be in its natural position. She complained of *bearing-down* pains, whenever she was in an erect posture; and these were always worse during her menstrual periods. She was about thirty years of age, and had borne two children. Her general health was tolerably good. Seeing, however, that death must inevitably ensue, if the tumour continued to increase in size, I informed her that the only means of relief was by the extirpation of the tumour; to which she readily consented.

After putting her upon low diet, and giving aperients and alteratives, for a few days, I performed the operation on the 24th. I commenced by making an incision from the umbilicus to within an inch of the pubis. After cutting down carefully to the peritoneum, I raised it with the tenaculum, and made an incision into it sufficiently large to introduce my finger, and then enlarging it sufficiently to introduce two fingers, I finished the incision by cutting between them. The tumour showed itself immediately, with its peritoneal covering. Finding that it could not be removed through the incision while of the present size, and being unwilling to extend the latter higher up, and believing, too, that the tumour contained a fluid, though deeply seated, I made a large opening into it with the scalpel, and evacuated several pints of watery matter; when it so collapsed, that I was enabled, though not without assistance and difficulty, to get it out of the abdomen. I now found, that the attachment to the right side of the uterus was not much larger than the usual breadth of the broad ligament. The tumour appeared to be an enlargement of the whole ovary; as the fallopian tube, with its fimbriated edge, was stretched over it. I then surrounded the attachment, including the fallopian tube, with a strong ligature of white silk, drew it very tight, and tied it; suffering both ends to remain long enough to extend several inches out of the incision. The tumour was then separated, at least three-quarters of an inch from the ligature. I then turned her over on the abdomen, (at the same time keeping in the intestines with a warm cloth,) to allow all the blood to escape from the cavity; and turning her on her back again, I took five threaded needles, and closed the external incision by the interrupted suture, taking great care to include the peritoneum in the stitches. I left the end of the ligature which included the attachment of the tumour, lying out of the lower end of the incision, and secured it by a piece of adhesive plaster; when, after laying on some long pieces of adhesive plaster across the abdomen, and applying a light bandage, I placed her in bed, and gave her seventy-five drops of tinctura opii.

She soon made some efforts to vomit. I then gave fifty drops more laudanum, and in half an hour after, two hundred per anum, which did not all seem to allay the irritation of the stomach. I then introduced five grains of gum opii, as a suppository; after which, she became easy, and slept an hour. In the evening, I directed a large decoction of senna, salts, jalap, and anise seed; of which she took a wineglassful every two hours, until morning.

25th. This morning she had a free passage; but had suffered from nausea since midnight. Pulse, 80; and appeared easy. On visiting her in the evening, found her vomiting; which, however, was soon allayed by large anodyne injections.

26th. She had several passages in the course of this day. In the evening, the nausea again returned; which was again relieved by the anodyne injections. She could not take any thing on her stomach, unless when under the influence of opium.

27th. She had rested pretty well during the night. Pulse, 110, and full. Some pain in her abdomen and back. Took eighteen ounces of blood, and gave ℥i. of sulphate of magnesia; which operated freely in the evening. The nausea had left her. A considerable quantity of serous fluid was discharged from the wound.

28th. Pulse, 120. Rested tolerably. Took twelve ounces of blood; and gave submur. hydrarg. grs. xv. and sulph. magnes. ℥ss. Applied blisters on each side of the wound. With the assistance of an enema, the cathartic operated in the evening, and she was much better.

29th. Pulse, 90. Pain nearly subsided. Catamenia returned, but more profuse than common. Took out the sutures. The wound looked well in the evening. Ordered an enema.

30th. Much better. Pulse nearly natural.

On the twenty-fifth day, I took away the deep ligature, by one thread at a time; since which, she has been tolerably well, except during her menstrual periods; at which time she complains of pain in her loins and abdomen.

Upon making an incision into the tumour, I found it to have a scirrhous appearance; and to contain, interspersed throughout its substance, a considerable quantity of bony matter.

You will, perhaps, be surprised at the large quantity of opium given to allay the irritation of the stomach; but experience has taught me that small quantities will not answer that intention: and as it is necessary to precede any inflammatory symptoms with a purgative, it could not be kept on the stomach in any other way.

The above paper, which we received through one of our members, from the author, we consider a highly interesting one. As this operation is peculiarly American, seldom, if ever, having been performed with success, so far as we know, in Europe, we are bound to consider this as one of a series, which have, unquestionably, done honour to our country. To enable the reader to judge of the degree of importance of these performances, and of the difficulty in which the first operators were placed, we have thought it not amiss to present a sketch, from the books of easier access, of what has been already done in cases of this description.

The extirpation of the ovaries appears to have been repeatedly performed on the human subject, among the ancients. Gyges and Andramites, both Kings of Lydia, are reported by writers to have been guilty of this outrage; in one, and, probably, in both instances, for the purpose of employing females thus mutilated in the offices commonly given in charge to eunuchs. The same enormity is stated to have prevailed in Egypt, and among the Creophagi, a people of Arabia. For these historical facts, the authorities are HESYCHIUS, SUIDAS, ATHENÆUS, and ALEXANDER AB ALEXANDRO.

BOERHAAVE quotes from WIER and DE GRAAF, a case in which a man, who made it his professien to castrate and spay animals, becoming irritated at the disorderly life his daughter led, extirpated her ovaria, and effectually removed her lascivious inclinations, without destroying her life. FRANKENAU is cited for an instance, in which an ovarium was removed by a penetrating wound, and in which the patient recovered. PERCIVAL POTT, and LASSUS, report cases, where, in one instance, a single ovarium, in the other, those of both sides, were extirpated, by removing them from strangulated hernias. Deneux, in his "Researches on hernia of the ovarium," states, also, that he had removed the greater part of one of these viscera; and that the woman recovered.

The operation of extirpating the ovarium for the removal of tumours, appears to have been first proposed by Platerus. Several writers, as Diemerbroeck, Delaporte, and Morand, have treated of the subject; and though there appears to have been some difference of opinion, that of Diemerbroeck and Sabatier appears to have prevailed, and to be generally received: viz. that it is altogether impracticable. The objections of the first of these writers have, however, less weight than those of the latter. Diemerbroeck alleges as objections, the danger of opening the cavity of the abdomen, and the fear of a hæmorrhage, difficult or impossible to controul, from the spermatic arteries. These must have been overcome in each of the instances above enumerated. Those mentioned by Sabatier, are, the frequency of adhesions; the enlargement of the vessels of the tumid ovarium; the difficulty or impossibility of ascertaining, positively, that the disease is really in the ovarium; the frequency with which both ovaria are affected; the fact, that surgeons are seldom applied to until the disease has made considerable progress, and frequently become liable to these difficulties, &c.

Notwithstanding these objections, an instance is cited by M. Valentin, from the practice of M. Laflize, a skilful surgeon at Nantes, in which he was necessitated (I know not how,) to open the abdominal cavity, in the cure of an abscess in the side. He was then induced to remove a tumour, found in that cavity, covered with *skin*, and bearing many long hairs, and a number of teeth, among which were several molares. These bodies are, as is well known, most usually found in the ovaries; from which, therefore, the presumption is, that M. Laflize separated the one in question; although it appears, from the observations of Ruysch and Baillie, that they are sometimes found elsewhere. The writer of this was shown, several years since, by a Member of Congress, a mass of this nature, having no distinct skin, but containing a number of hairs, and of incisor teeth, irregularly dispersed, which had been separated from a larger one, contained in the rectum of a girl, from which the one he saw hung pendulous. We do not mention names, because the physician who separated it, with whom we have not the advantage of a personal acquaintance, may wish to publish this very curious case.

There has come to our knowledge, a rumour of an instance, which we believe was never published, in which a man in New Jersey, extracted one of the ovaria, in a quarrel, from his own wife. We have hopes of being able to present our readers with the particulars, in a future number of this Journal.

The first instances, of which we are aware, in which this operation was performed by a surgeon, for the removal of a diseased ovarium, are a memorial of the courage of Dr. EPHRAIM M'DOWELL, of Danville, Kentucky. His first case was in December, 1809. The female was here affected with labour-pains; and her case was taken by two physicians for pregnancy. On examination, however, per vaginam, Dr. M'Dowell found nothing in the uterus; and concluded, from consideration, that it was an enlarged ovarium. The incision was made parallel with the rectus abdominis, at the distance of about three inches, and was nine inches long. The tumour was at first too large for extraction. A ligature was put round the fallopian tube, an incision made in the tumour, and about fifteen pounds of a "dirty, gelatinous-looking" substance extracted. After this, the fallopian tube was cut, and the ovarium extracted, weighing seven pounds and a half. The intestines rushed out of the first opening, and remained out of the abdomen until the tumour was removed. The woman was then laid on her face, to allow the escape of the effused fluids; and the wound afterwards closed with the interrupted suture and adhesive plaster. The ligature of the tube was brought out of the lower end of the wound. In five days after this dreadful operation, the woman was found "engaged in making up her bed;" and in twenty-five days, she returned home, a distance of sixty miles, in good health.

In the next case, the tumour was immoveably fixed; and was found adhering to the fundus uteri and to the bladder. Having opened the abdomen, however, Dr. M'Dowell made a small incision into the tumour, and removed a large amount of gelatinous matter and blood. He then closed the external wound; and the woman apparently recovered. It is stated, however, in a subsequent communication by the same author, that the swelling gradually returned, and, six years after, became as large as at the period when he operated on her. This patient, a negro woman, was sufficiently relieved, during the interval, to be able to fulfil her usual avocations.

In the third case, the tumour "adhered to the left side." Dr. M'Dowell cut from an inch below the umbilicus to within an inch of the pubis, and then enlarged the opening to the right of the umbilicus, and for two inches above it. He placed a ligature on the tube, as in the first case, and "turned out" an ovarium, which weighed six pounds. No mention is made of the manner in which the adhesions to the left side were overcome. The wound was closed as before. This patient, (who was also a negress,) recovered in two weeks; excepting the removal of the ligature, which was not effected till after the lapse of five weeks.

In April, 1817, Dr. M'Dowell removed, from another negro woman, a tumour of the ovary, weighing five pounds. The incision was made "near the linea alba." The ligature slipped from the fallopian tube, after its division, this organ being short and spongy; the patient, of consequence, lost a great amount of blood. Ligatures were then applied to several of the arteries, individually; but this also failed, as some of them cut through. With much difficulty, a large ligature was now put round the whole stump of the tube, and secured by stitching it in and out of the tube, at several places. This, at last, effected the purpose; and with precautions similar to those in the first case, mentioned above, the wound was closed. The patient recovered of the operation; but remained in ill health; her complaints appearing to be hysterical.

In April, 1818, the same practitioner saw another negro woman, whom he tapped four times, removing, at each time, a large portion of a gelatinous fluid. He found a firm substance of considerable size, with the probe, which he had introduced to break down the gelatinous masses which presented themselves in the discharge. Finding no marks of pregnancy, per vaginam, he concluded it to be an enlarged ovary. He operated by an incision on the left side. The tumour adhered, by long and slender attachments, to several of the adjacent parts. These adhesions he secured by ligatures, as several of them bled. After a process similar to those described above, the wound was closed. She died, however, on the third day; having been affected with violent pain in the abdomen, and obstinate vomiting. The peritoneum was found violently and extensively inflamed.

Hair and a bone were found in this tumour; as well as a large, round perforation, of the size of a musket ball, opening into the cavity of the abdomen.

These curious cases are described in the Eclectic Repertory, vol. 7, p. 242, and vol. 9, p. 546. It is certainly much to be lamented, that the accounts there given, of so important an operation, were not more copious; and this circumstance has drawn forth comment in the same journal.

In July, 1821, Dr. Nathan Smith, Professor of Physic and Surgery in Yale College, extirpated an ovarium, from a lady of Vermont. It had been observed, several years before, when about the size of a goose egg. It burst into the abdomen three times, twice during pregnancy, and once from a fall. At the time of the operation, it exhibited a large tumour, in the right side of the abdomen; and was both moveable and capable of internal fluctuation.

The tumour was pushed up into the middle of the abdomen, and an incision, of about three inches long, made in the linea alba, from about an inch below the umbilicus. The peritoneum was not opened till the blood had ceased to flow from the first incision. The tumour was exposed and tapped, and a canula introduced. Eight pints of a dark, ropy fluid were removed. The sac was then drawn out, and separated, with the knife, from the omentum, to which it adhered. Two arteries in the omentum were tied with *leather ligatures*. The ovarian ligament was then divided, two arteries secured as before, and the ligament returned. The adhesion to the parietes of the abdomen, was separated by a touch of the knife, and the use of the fingers. The sac was supposed to weigh between two and four ounces. The incision was then closed with adhesive plaster and a bandage.

No unfavourable symptoms occurred. In three weeks, the patient was able to sit up and walk; and she afterwards recovered.*

In the current year, (1825,) Mr. Lizars, author of the "Anatomical Plates," has published in Edinburgh, a small folio, illustrated with splendid coloured plates, entitled, "*Observations on Extraction of Diseased Ovaries.*" He enumerates four instances of attempts at this operation; one of which had been published previously. In this instance, the abdomen was opened, but no tumour found; affording a striking instance of the uncertainty of the judgment of a consultation of several eminent physicians, in this difficult and obscure affection. The woman recovered in a short time, after experiencing some trouble from vomiting. In a second case, one ovarium was successfully removed, and the woman recovered; leaving, however, the other ovary diseased, and enlarged to about one-fourth of the size of the one removed. This appears to have been in consequence of adhesions, and the length of the operation. In the third case, the tumour was entirely removed; but the patient died, of peritonitis, in fifty-six hours. The fourth patient, presented, on opening the abdomen, a great collection of blood vessels in the omentum, running into the tumour, and so numerous and large, that Mr. Lizars was unwilling to proceed with the operation. The woman, at the last accounts, was apparently recovering. We quote this from the Edinburgh Medical and Surgical Journal for June, 1825.

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* Ed. Med. & Surg. Journal, vol. 18, p. 532.

Such is the history of an operation, of the opinions of which, now entertained by some, in England, we can judge in part from the following fact. In a number of Johnson's Medico-Chirurgical Review, in an article on the late work of Dr. Blundell, which distinguished physiologist had been urging on his countrymen an imitation of the bold and successful men who originated this practice, the editor, or reviewer, makes the following remarks:—" *We entirely disbelieve that it has ever been performed with success; nor do we think it ever will.*" B. H. C.

ARTICLE IV.—*On the Non-Mercurial Practice in Syphilis.* By THOMAS HARRIS, M. D. *Surgeon of the United States Naval Hospital at Philadelphia.*

THERE is no disease which has elicited more of the attention of surgeons, than the venereal; and few, perhaps, on which more opposite opinions are entertained. For this reason, it is inferred, that every contribution to the general stock of knowledge, relating to this subject, must be acceptable to the medical public.

Holding an appointment in the public service, it has been my fortune to have had more cases of this malady under my care, than is common to surgeons of my own age, engaged in private practice. Opportunities have thus been afforded, to witness it in all its protean forms, as influenced by every variety of climate and constitution, as well as by the different methods of treatment, which are usually pursued for its cure.

Educated to rely on the specific virtues of mercury, in every form of syphilis, I exclusively pursued this practice for six years after I was commissioned a surgeon in the navy. During this period, I had several hundred cases of this complaint under my immediate charge.

Two weeks after the Macedonian sailed, in the year 1815, from Messina, a port in the island of Sicily, I had, at one time, fifty-seven men under the influence of mercury for this affection.

This remedy was in all instances promptly prescribed, after the disease had been contracted, and with as much care and circumspection as could be expected, in the situation in which I was placed. I had often to lament, however, a want of success; and was not unfrequently perplexed with new complaints, supervening on the original disease.

Of the fifty-seven cases treated with mercury, on board the Macedonian, six were affected with secondary symptoms, while under the influence of a salivation for the primary sores; two were affected with excavated ulcers of the tonsils; one with excavated ulcers of the tonsils, and iritis; two with tubercular and papular eruptions; and one with scaly eruptions, combined with superficial ulcer of the soft palate, and periostitis. A large majority of these patients were cured between the periods of ten and thirty days; yet there were others, who continued under treatment for months afterwards. At the expiration of six months, at which time I had permission to leave the ship, three of the number continued on the sick report. Others, whom I had thus treated, reported themselves to my successor, affected with different forms of secondary syphilis; but of the precise number, I have been unable to learn. The number of cases affected with secondary symptoms, may have been increased, by the exposure of the patients in a damp ship; by their liability to take cold from being so situated, and by their occasional irregularity in living. I believe, with HUNTER, that such causes not unfrequently excite into action, what is usually denominated secondary syphilis.

I kept no record of the appearance of the primary sores, in the cases to which I have alluded; for I then believed, as I do now, that their various aspects did not depend upon any specific difference in the character of the ulcers, but upon the particular tissue affected, upon the duration of the disease, and upon the condition of the system, at the time it was invaded with this affection. In proof of there being no *specific* difference in the character of these sores, it may be stated, that, in their progress, or during the course of treatment, they change from one form to another. It has been repeatedly remarked, by surgeons of high authority, that when several men have had connexion with the same woman, in immediate succession, each has been affected with a distinct form of the disease. While one has had gonorrhœa, a second has had a Hunterian ulcer, a third a superficial ulcer, &c. Such examples I have more than once seen among the sailors in the public service.

HUNTER was the first, so far as I know, who originated these views. They are now fully confirmed, by the testimony of LAGNEAU, JOURDAN, ROSE, GUTHRIE, HENNEN, and others. "I am well aware," remarks the last author, "that some practitioners have assumed to themselves the possession of a 'tactus eruditus,' by which they can at once distinguish a chancre, or a venereal ulcer, or eruption, in which mercury is indispensable, from one of a different nature; but I have seen too many instances of self-deception, to give them all the credit to which they lay claim."

The declaration of CARMICHAEL, that each different primary ulcer is followed by its own peculiar train of secondary symptoms, is found to be unsupported by fact. The ample and extensive observations of the British army surgeons, conducted under the enlightened direction of Sir JAMES M'GRIGOR, the Director General of the Medical Department, are directly at variance with such an opinion. These distinguished surgeons have seen no correspondence whatever, between the primary and secondary affections. On the contrary, they have witnessed every variety of constitutional syphilis, to arise from a single form of primary disease.

The discriminating test of HUNTER, and others, is found to be equally erroneous. They assume, that mercury is proved to be an antidote to syphilis; and hence conclude, that every disease which yields to this remedy, must be of a similar character. Now, as this medicine may be advantageously used in a variety of affections, that have no connexion with any form of the venereal disease, we can readily understand how a delusion so very singular has been encouraged. The promulgation of such an opinion is the more extraordinary, since it is admitted, by every practitioner, that mercury will not, in every instance, cure syphilis. To cite examples of this kind, were useless, as they are acknowledged by the mercurialists themselves. HUNTER states, that he has had such cases; and, after a number of failures with his *specific*, he has successfully resorted to guaiacum, sarsaparilla, and sea-bathing.

In other instances of failure with mercury, he resorted to an expedient, which, while its absurdity cannot fail to provoke a smile, must awaken regret, that a mind ordinarily discriminating, should be obscured and confounded by its own ingenious speculations. Entertaining the opinion, that "no two actions can take place in the same constitution, nor in the same part, at one and the same time;" and believing, that secondary syphilis is weakened, and its character changed, by duration, it occurred to him, that if a patient thus affected were inoculated with fresh venereal virus, it would, by its superior or youthful energy, overcome the old or original disease. To test the soundness of his theory, he directed a patient, whose disease had long resisted his curative efforts, to contract this complaint anew, to suspend the further use of mercury; and if, under these circumstances, he recovered, the accuracy of his views would be placed beyond the reach of cavil. The result of this, as well as other experiments of the same nature, were such as he anticipated. The patients thus treated were all perfectly cured.

It should be recollected, however, that these patients had been under the continued use of mercury for many months; and were, according to Mr. HUNTER's own statement, getting gradually worse under this treatment. When he caused the patients to be re-infected, he directed that the use of this medicine, in every form, should be suspended. Now, as this distinguished surgeon admits, that mercury often excites disease,* and that it had an injurious effect in the particular cases on which he had experimented, it is sufficiently apparent, that these patients owe their recovery to a suspension of the injurious agent which had been prescribed as a remedy, and not to the practice of inoculation.

If, then, the warmest advocates for the mercurial practice admit, that it sometimes fails to perform a cure; that it often aggravates the complaint; that it excites scrophula in persons predisposed to this disease; that it induces nervous affections, from which, at times, patients never recover; that it lays the foundation for rheumatism; that it produces deformity, by destroying the teeth: if, I say, it be capable of producing the injurious consequences stated by its advocates, are we not warranted in resorting to other remedies, which are milder in their operation, and which have been proved to be not less certain in their effects?

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* "Mercury, in some, produces a kind of hectic fever; that is, a small, quick pulse, loss of appetite, restlessness, want of sleep, and a sallow complexion, with a number of consequent symptoms."

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"It further brings on very disagreeable constitutional complaints, such as loss of appetite, watchfulness, sallow complexion, lassitude from the least exercise, and swelled legs; and, although various means were used to reconcile the constitution to it, yet it continued to act as a *poison.*" * * * * * * *

"Mercury often produces pains like those of rheumatism; and also nodes, which are of a scrophulous nature."—*Hunter's Treatise, pages* 312, 313.

"Mercury, when it falls on the mouth, produces, in many constitutions, violent inflammation, which sometimes terminates in mortification; it is also capable of retarding the cure of chancres, buboes, and certain effects of the lues venerea, after the poison has been destroyed."—*p.* 315.

"We often find, that while a mercurial course is going on, and the ulcers on the tonsils healing, or even healed, they shall swell, become excoriated, and the excoriations shall sometimes spread over the whole palatum molle, which renders the nature of the disease doubtful. * * * These cases prevail considerably; for it is difficult to say, when the venereal virus is absolutely gone."—*p.* 341.

"We find, also, that new diseases arise from the mercury alone. The tonsils shall swell where no venereal disease has been before; the periosteum shall thicken, and also, probably, the bones; and the parts over them shall become œdematous, and sore to the touch."—*p.* 342.

Similar opinions might be extracted from most candid writers upon this subject; but as Mr. Hunter is considered the most authoritative among the mercurialists, I deem it unnecessary to extend my paper with further quotations.

The method of treating syphilis without mercury, is by no means a new practice. It is as old as the earliest records of surgery. Ulcerations of the genitals, phymosis, paraphymosis, warts, condylomatous excrescences, buboes, gonorrhœa, and ardor urinæ, were not only known to the ancients, but readily cured by an alterative course of treatment. The testimony collected by the learned Sprengel, from the Greek, Roman, and Arabian, as well as from some of the early French and English surgical writers, conclusively establishes this point. It is sufficiently evident, that mercury was not used, because the mineral was not known, as a medicine, until about the close of the fifteenth century. But admit, as some writers assert, that the syphilis which now prevails, is different in character from that which assailed the ancients; and that it was imported into Europe by the followers of Columbus; still, even this view of the question proves that the disease was under the controul of other agents than that of mercury.

It is well known, that this mineral was, and is, still unknown to the Indians, as a medicine; and yet, no one pretends that syphilis is considered among them as an incurable disease. On the contrary, it is asserted to be mild in its symptoms, and altogether manageable, as it is found among every people of temperate habits, and who avoid such articles as are calculated to induce constitutional irritation.

The use of mercury in syphilis, has been occasionally interrupted, since its general introduction. "I remember," says Morgagni, "when I was quite a young man, and went to Bologna, that both methods (the external and internal) of using mercury, were so far deserted, that I never saw any physician make use of it, for the whole space of eight years, during which I studied physic there, in either one way or the other way. What remedies, then, have you seen those very excellent physicians make use of, you will say, against the lues venerea? Why, the decoction of woods, &c. &c."

The history of surgery thus affords the most satisfactory testimony, in favour of what is called the non-mercurial practice in syphilitic diseases. The invaluable and impartial reports of the British army surgeons, which were fully confirmed by the information which I obtained when in Spain, determined me to give the mild, alterative treatment, a fair trial, when a suitable opportunity offered. In this determination I was strengthened, by the assurances which I received from Doctors CHAPMAN and DEWEES, that they had adopted the non-mercurial practice, with but few exceptions, long before the appearance of FERGUSON'S paper, which was published in 1811. Doctor ROUSSEAU, of this city, adopted a similar practice about the same period; and in it he still perseveres, with increased confidence in its success.

In the year 1819, the Naval Hospital on the Philadelphia station, was placed under my direction, which afforded me an opportunity of testing the powers of the alterative method of treatment. As the men in this establishment were under my exclusive controul, and as they could receive no medicine, or diet, which was not prescribed by myself, I felt assured, that there could be no deception in the result of my cases.

My first patient was affected with ulcers of ten days standing, situated on either side of the frænum, and accompanied with so much inflammation, as to render the retraction of the prepuce extremely difficult. Possessing all the characteristics of the Hunterian chancre, and thus indicating, according to CARMICHAEL, the use of mercury, I at once concluded, that the result of my treatment in this case, must greatly influence the course of my subsequent practice.

To subdue the general arterial excitement, as well as local inflammation, he was bled and purged repeatedly; saturnine lotions were applied to the inflamed part, and the patient required to confine himself to a horizontal position. After the inflammation was thus removed, the ulcer was washed, once a day, with a solution of sulphate of copper; and the patient directed to drink freely of the decoction of the woods. Under this treatment, the chancres so rapidly improved, that on the sixteenth day they were entirely cicatrized. This patient remained on the Philadelphia station for two years afterwards, without the slightest symptom of secondary syphilis.

The next patient had an excavated ulcer of the glans penis, with incipient bubo, of eight days standing. This case was attended with some arterial excitement, and great derangement of the digestive organs. I pursued the same depletive plan, as in the former instance, together with rest, and a low diet. After the patient was sufficiently reduced, the solution of sulphate of copper was applied once a day to the chancre, and the tobacco ointment was kept continually in contact with the bubo. On the nineteenth day, the ulcer was healed, and on the twenty-sixth, every vestige of the bubo was discussed. This patient remained on the Philadelphia station, thirty months after treatment, without any secondary symptoms.

Such flattering results awakened confidence in this system, and encouraged me to persevere. With the exception of three cases, in which I prescribed alterative doses of mercury, I have not used it in any form of the venereal, for the last six years. Two of these cases were indolent swellings of the groin, of doubtful character; and the other, a superficial ulcer, situated on the internal lining of the prepuce, accompanied with inflammation of the conjunctiva, and slight opacity of the cornea. The mercurial treatment in these instances, proved serviceable, as it doubtless would have done, had such symptoms arisen from any other cause.

During this period, I have had under my care, one hundred and sixty-four cases of venereal, in all its various primary forms. Fifty-three of these were private patients, and one hundred and eleven were attended in the Naval Hospital.

In all cases, the general remedies were regulated by existing symptoms. As the disease was, in most instances, connected with constitutional disturbance, I often found it necessary to bleed, and always to purge freely.

Believing that the primary venereal affection never produces constitutional symptoms, excepting under a particular state of the system, I think it of great importance to bestow attention to the general condition of the constitution. With this view, principally, I prescribe, with other suitable remedies, the warm bath once or twice a week, and the decoction of the woods. These remedies promote that healthful action of the surface, on which is dependent the proper performance of all the other functions of the body. To this treatment, particularly, I am disposed to attribute the rare occurrence of secondary syphilis in my own practice.

The topical remedies were varied according to circumstances. When there was much inflammation, either poultices, or cooling lotions, were applied, until this symptom was subdued. Afterwards, the ulcer was treated with either the black-wash, composed of calomel and lime water, or with the cupreous solution, of the strength of ten grains of the sulphate of copper to the ounce of water. If this solution be applied oftener than once a day, it does injury, by exciting inflammation. When a more powerful escharotic is indicated, the lunar caustic may be resorted to with advantage. In venereal ulcers, I have generally found the unctuous applications injurious.

Among the fifty-three private patients, whom I had thus treated, for the primary affection, there did not occur, to my knowledge, a single case of constitutional disease. A few of this number were strangers, it is true, of whom I lost sight, soon after I had pronounced them cured. The majority of them, however, I am in the custom of seeing frequently; and several of them are married, and blessed with healthy children.

Of the number treated in the Naval Hospital, which was one hundred and eleven, two cases only were followed by secondary symptoms. The first patient was affected with pustular eruptions, which occurred five weeks after being cured of an obstinate and virulent gonorrhœa. The other was a case of mild tubercular eruption, which appeared while the patient was under treatment for an excavated ulcer of the glans penis, accompanied with a bubo in the left groin. Both these cases yielded to the alternate use of the decoction of the woods, and the nitro-muriatic acid, in connexion with warm bathing. Not one of the patients, whose primary sores were treated on the non-mercurial plan, were subsequently affected with either ulcerated throat, or disease of the bones.

Since I have abstained from the use of mercury, in the management of this disease, twenty-three cases with secondary symptoms have come under my care. A few of these were my public, and the remainder my private patients. They had all been treated on the mercurial plan, by other practitioners; and, no doubt, according to the rules prescribed for the exhibition of this mineral. To the liability of patients who have been salivated, to receive cold, which, as I have already stated, is the ordinary exciting cause of secondary symptoms, I attribute, in some degree, their frequent occurrence. I have not assumed the privilege of deciding, whether the twenty-three cases were, for the most part, venereal, or mercurial. Nor are those nice and difficult discriminations, of much practical importance, if the patients be treated according to the alterative method. These cases were all perfectly cured, without the use of a single grain of mercury. Several of them proved tedious, it is true; but having acquired confidence in the non-mercurial practice, I persevered, and was ultimately rewarded with success. Whether, or not, the cure would have been expedited, in some of those cases, by the use of mercury, is altogether a matter of conjecture.

In many instances, this medicine makes a most salutary impression on the venereal disease; in some, it effects a cure even more tardily than in the cases to which I have referred; and in others, it greatly aggravates every symptom. We have not yet acquired sufficient tact, to enable us to select the precise cases for which this valuable medicine is particularly adapted. This faculty of discrimination, does not consist in being able to reduce the several forms of the disease into different classes; but to anticipate the effects of the mineral, upon every peculiar temperament and idiosyncrasy. Such prescience has not been accorded to short-sighted mortals.

The following tables will exhibit a compressed view of the result of my practice. This view would be more satisfactory, provided I were able to notice the character of every different form of the primary disease, from which the constitutional affection emanated. In a majority of the cases, I have not been able to obtain any satisfactory history, in consequence of their being attended for the original disease, on other stations, and by other surgeons.

Character of the Primary cases.	*Average number of days under treatment.*	*Number affected with Secondary symptoms.*	*Character of the Secondary cases.*
Hunterian ulcers,	19	None.	
Hunterian ulcers, in connexion with bubo,	26¼	None.	
Non-Hunterian ulcers	23¾	None.	
Non-Hunterian ulcers in connexion with bubo,	37	1	Tubercular and scaly eruptions.
Gonorrhœa,	17	1	Pustular eruptions.
Gonorrhœa in connexion with bubo,	38	None.	

Character of the Constitutional Disease.	*Average time required for the cure.*	*Number of patients who have experienced a recurrence of the constitutional disease.*
Papular, tubercular, and scaly eruptions,	47 days.	None.
Tubercular eruptions, with ulcerated throat,	77 days.	One.
Ulcerated throat, with affections of the bones,	9 months.	None.
Ulcerated throat, with periostitis,	4 months.	None.
Tubercular eruptions, with disease of the bones,	13 months.	None.

It will be perceived, that I have noticed gonorrhœa as one of the primary forms of syphilis. In this view of the subject, I am sustained by the recorded opinions of HUNTER, HENNEN, GUTHRIE, JACOBS, JOURDAN, LAGNEAU, and many other distinguished surgeons.

I am aware, that a majority of enlightened practitioners consider gonorrhœa and chancre as distinct diseases; but the weight of authority is decidedly in favour of their identity of character. The experiments of HUNTER, which were said to have been performed upon himself, go far to establish this point. By inoculating himself with the matter of gonorrhœa, he produced a legitimate chancre, which ultimately produced constitutional syphilis.

These experiments were repeated under the direction of Mr. BENJAMIN BELL, and with what *he* supposes, different results. He admits, that sores were produced by the inoculation; but as they were cured without mercury, he inferred that they could not be truly syphilitic. Such an argument, in the present age, will be of little avail, and cannot, in any degree, affect the validity of Mr. HUNTER's experiments.

ARTICLE V.—*On Curvature of the Spine. By* JOHN K. MITCHELL, M. D. *one of the Physicians to the Philadelphia Alms House Infirmary.*

ANTERIORLY to the time when Mr. POTT called the attention of physicians to this disease of the spine, it had, in modern Europe at least, fallen into neglect. The subjects of it, usually the most interesting and intelligent children, were left to their fate, and consigned, without a hope, to pain, distortion, and death. The accidental discovery, by HIPPOCRATES, that issues or setons afforded sometimes a remedy, led to the occasional use of the actual cautery, and of caustic issues. Long, however, before their revival by Mr. Pott, these means of cure had fallen into disuse, and nothing equally good had been substituted in their place.

As Mr. Pott confounded those cases which depend on caries, with those which have their origin in some unknown distemperature of the vertebral column, *his* practice, exceedingly valuable in one class of these affections, but injurious in the other,—has, gradually, fallen into neglect.

Since that period, the increasing frequency of this disorder has called to it, more particularly, the attention of the profession. It is now generally believed, that the posterior and angular curvature is the only deformity of the spine dependent on caries; and that the lateral or serpentine distortion results either from general constitutional debility, debility of the spinal braces, or some specific disease of the intervertebral substance itself.

While, therefore, for that form of the disease dependent on caries, *rest* and *issues* are prescribed; for the others, are applied, exercise, various modes of suspension, and such diet and medicines as are, in the opinion of the practitioner, likely to restore the tone and vigour of the constitution.

Without pausing to consider, at present, the novel theories respecting the pathology of the various forms of curved spine, I will proceed to recount the remedies which have, in my hands, and in those of some of my medical friends, produced results so satisfactory, as to lead to the reasonable hope, that this formidable disease will soon cease to be classed among the *opprobria medicorum.*

It is now generally admitted, that *lateral curvatures* of the spine demand, 1st, that mechanical means should be used to correct the curve; 2d, that they should be applied in such a manner as to give to the muscles of the spine, and, indeed, to all the muscles, great freedom of motion; and, 3d, that every means of augmenting the tone and vigour of the system, and of the spine, should be perseveringly applied.

To fulfil the first of these indications, many ingenious *instruments* have been constructed. These may be divided into two classes. Both of them elevate and support the head, and sometimes also the shoulders; but the one class transfer, by appropriate mechanism, the weight of the upper part of the body, from the spine to the pelvis; whilst the other class take it off entirely. Chesher's collar, and the common stays and steel rod, are examples of the one; the screw chair, and braces and pullies attached to the roof, are instances of the other.

Both these classes are objectionable. The instruments of the first class support the body, but not with sufficient power; and, although they permit general exercise, they so bind down the muscles of the trunk, so compress the abdomen and chest, as to be sometimes useless, and often prejudicial. Their weight, too, added to the weight of the trunk, is often more than a debilitated patient can bear.

The objections to the ordinary instruments of the second class, are still more formidable. Whilst they forbid all muscular exercise, and thus increase constitutional debility, they are too confining and irksome to be long borne by any patient. Hence, the most recent writers condemn the use of such means, or acquiesce in their application only under severe restrictions.

To attain the same end, that of keeping the spine in its natural shape, DARWIN recommended the recumbent posture, during several hours of every day. This suggestion was followed out by Mr. BAYNTON, by whose recommendation the patients were confined to the horizontal posture for months, and, in some cases, for years. The inclined plane was supposed to be an improvement on this practice, both because the cephalic system suffered less from congestion, and because the inclined posture was more favourable to the elongation of the spine. In Paris, the two modes of practice have been combined. While the patient is laid in a horizontal posture, braces are applied to the head and shoulders, and to the pelvis, so as to cause extension of the spine. The total want of exercise exhibits this practice in an unfavourable light. In consequence of it, the digestion is impaired, the circulation languishes, the muscles are weakened, and there ensues a "degeneration of all the joints." One of the most celebrated writers on curved spine, declares, that a soft state of the vertebræ exists only in those cases of lateral curvature, in which the patient has been long and strictly confined to bed: "but if the person has been in the habit of taking exercise, a short time previous to death, the bodies of the vertebræ are discovered to be as firm and compact as those in a perfect spine." Sir ASTLEY COOPER, himself, has affirmed, that he never knew a single instance of cure of *lateral curvature* by the use of the inclined plane. For these reasons, the most recent European writers on this subject, admit, that the inclined plane is falling into disuse and discredit.

Hence, all the means heretofore proposed, for extending, and keeping extended, the deformed spine, have been found inadequate to the cure of the disease; and so hopeless does the subject appear to out most eminent practitioners, that one of them very recently remanded to the country, as incurable, two cases of this kind, which had been brought in for his inspection.

The instruments most likely to be useful in cases of lateral curvature, are such as extend the spine, transfer to the *ground*, or some other *extraneous* supporter, the weight of the upper portion of the body, and leave the patient the full power of locomotion or muscular exercise.

Such instruments, if judiciously and timeously applied, cannot fail to prevent deformity. Whilst they correct the curvature for the time, and thus remove the mechanical disadvantage under which a bent spine labours, in resisting the superincumbent weight of the parts above it, they afford the patient the full enjoyment of exercise, and an opportunity of employing all other means promotive of health and vigour.

Fig. 1, of the annexed plate, exhibits an instrument of very simple construction, which combines all the advantages enumerated. It consists of a ring of wood, *c*, of greater diameter than that of the body of the patient, supported by four legs, terminating in wheels or castors, after the fashion of a common go-cart. To enable the child to enter it with facility, it is divided into two semicircles, united at one extremity by a hinge, and having clasps to close them at the other extremity, *c*. To the ring is attached a square steel or iron socket, *b*, in which is inserted the strong steel rod, *a*.* The rod being susceptible of movement in *b*, may be elevated or lowered, and fixed in a proper situation by the screw at *b*. To *a* is appended the steel head-piece, represented at *d*, fig. 2, intended for the support of the straps represented in fig. 5. If deemed necessary, straps may be appended to *a*, so as to afford a support for the shoulders, as well as the head.

Much has been said by authors, of the irritating and excoriating effect of the straps used to support the head, in the corset and steel-rod apparatus: but I have not seen any difficulty arising from this cause, since, at the suggestion of the mother of one of my little patients, I had the straps made of silk. For the information of those who may not have seen these straps in *any* apparatus, I have directed their delineation in fig. 5. *i*, Represents that part which supports the chin, and *k*, that which is applied to the back part of the head.

Supported by this apparatus, the motions of which are remarkably easy, the little patient may enjoy exercise without fatigue and without pain, and engage in the sports of his associates. For a few days, the erect posture and confinement of the head occasion some expression of impatience, but they cease to be considered evils; and the instrument becomes a kind of toy, in which the child is desirous of exhibiting certain feats of agility.

In no one case has it hitherto been found necessary to confine any patient to a machine for more than four hours a day, and that for one hour at a time. In some cases, the children have not been placed under any restraint, during the remaining portion of the day; but in others, it has been found necessary to place them on couches, or inclined planes, or cause them to remain for a certain time in such a chair as that represented in fig. 2. Very few cases, however, demand more than four hours confinement to the spine-cart, or any other apparatus.

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* The socket for the case of a child five years old, may be made three-eighths of an inch square, and ten inches long. The rod, fitted accurately into the socket, should be of such a length as to descend to the bottom of the socket, at the commencement of the treatment, and admit of gradual elevation.

As it is particularly desirable to give exercise to the muscles of the trunk, especially those of the spine and back, several other instruments may be found useful. Of these, the spine-swing, fig. 4, and the spine-horse, fig. 3, will be found particularly useful. The motions necessary to propel either, are made chiefly by the muscles of the trunk, and these motions are made in such instruments with pleasure and facility. As the suspensory band limits the motions of the body, the swing or horse requires to be put in motion by an assistant; after which the patient can easily keep it up. To suffer the patient to remain in any apparatus of this kind without keeping it *in motion*, is to lose a great portion, if not the whole, of its usefulness. In the *spine-cart*, the child seldom chooses to remain at rest; but he sometimes neglects to keep his *swing* or *rockers* in motion.

For the purpose of affording greater variety of amusement, the seat of the spine-horse has been made moveable, and is represented separately at *g*. The patient may, when the seat is removed, stand on the platform, *f*, and rock the horse; or, by inserting the leg, *e*, into the aperture, *f*, he may be seated, and perform similar movements.

The shafts of the swing should, for an obvious reason, consist of wood. The cross-piece, *l*, should revolve on pivots, so as to afford greater freedom of motion. If this be not done, then, instead of attaching a stiff iron rod to the head piece of the little girl, attach the head piece to *l*, by a string.

The degree of suspension is, perhaps, one of the most difficult points to ascertain, in the management of these cases. I have usually made very little extension for the first week; but have thereafter elevated the rod from one-eighth to one-fourth of an inch weekly, in proportion to the yielding of the spine. The progress in the reduction of the curve is, of course, more rapid at first; but as the curve is lessened, the mechanical advantage of the suspensory apparatus is equally diminished; and its effect is also resisted, when that degree of curvature is removed, which depended exclusively on causes having no relation to change of structure. But when a remnant of deformity is kept up by a change in the form of the vertebræ, and their *intermedium*, the operation of the remedies must be as tedious as was the disease during its formation. When there is caries, we must wait for the production of new bone to support the wasted column; and when there is, without caries, a wedge-like condition of the vertebræ, we must rest on the slow, but certain, processes of absorption and deposition, for a final cure. If undue pressure on one side of the column, produces the deformity, the removal of that pressure to the other side, must ultimately correct the distortion.

For the fulfilment of the second indication, nothing more seems necessary, than to use the means suggested for the first. Cases *may* occur, of so violent and intractable a nature, as to demand continual support. Such must be kept, during the whole period of treatment, in one or other of the many instruments designed for the suspension of the head, and which at the same time interfere not with either general or partial exercise.

But the mere suspension of the head and upper part of the trunk, will not alone remove the disease. Such a measure obviates one effect of a disease, which must be cured by time or the skill of the physician. To effect a speedy cure, attention must be paid in this, as in all other cases, to the causes and symptoms. The immediate cause of *posterior curvature* is usually a carious condition of some of the vertebræ. In all such cases there is more or less inflammation of the parts adjacent. Rest, counter irritants, and, if necessary, depletion, may be resorted to, with the effect of so far removing pain and irritation, as to permit the use of means calculated to lessen existing, or prevent increasing distortion.

The immediate cause of *lateral curvatures* is yet a subject of doubt and discussion. Mr. Shaw, who has written a very valuable work on the subject of lateral curvatures, denies the existence of any specific spinal disease in such cases; and ascribes the curvature to errors in posture, whilst sitting, standing, or sleeping—to the too frequent use of the right side of the body, and other similar causes acting on a debilitated fabric. Dr. Jarrold, of Manchester, on the other hand, attributes it to a specific disease of the intervertebral substance, and not to any affection of the bones, muscles, or ligaments, nor to general debility, nor errors of position. One of the immediate effects, however, of such a curvature is, the diminution of the height both of the vertebræ and intervertebral substance, on the concave side, so that the vertebræ become of a wedge-like form. This is owing, in part, probably, to absorption, at least of the inelastic bodies of the vertebræ, caused by unusual pressure on that side. The degree of *extension* applied to the convex side of the curve, may also co-operate, by the elongation of the elastic intermedium, and subsequent deposition of interstitial matter. If these views be just, then the beneficial influence of a strong suspension will be better appreciated. Forbidden, by the nature of my essay, to enter fully on the consideration of this subject at present, I shall act on the supposition that the pathology is unknown, and proceed to an examination of the symptoms.

In *all* the cases which have fallen under my observation, symptoms have pressed upon my attention, which showed a diseased state of two of the most important functions of the system. Loss of appetite, constipation, an exceedingly foul tongue, and a fetid breath, exhibited a depraved condition of the function of digestion;—a harsh, rough, scaly, and sometimes eruptive skin, manifested an imperfect action of the cutaneous organ. To remedy these symptoms, it has been customary to resort to the use of tonics, and especially the chalybeates, which, indeed, *had* been given in some of the cases, before they fell into my hands. Finding that my patients commonly grew worse under such treatment, I endeavoured by a course of active catharsis, accompanied by a generous and nutritive diet, to afford a natural and agreeable stimulant to the stomach, and prevent the bowels from suffering under an accumulation of *sordes*. In the choice of a cathartic, I was governed by the case; but found that, of all cathartics, the following produced the best effect at the time, and undoubtedly was more congenial to the system during a protracted use of purgatives:

R. Jalap, one part.

Supertart. Potass. two parts, ms.

ss. To be given every night, for a week, or according to circumstances; and thereafter, every alternate night, for months, or whilst required. The dose should be so graduated as to produce two or three evacuations.*

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* My friend Dr. Thomas Harris, in certain cases, applied with remarkable effect, the remedies suggested by Dr. Jarrold. Extract of hyoscyamus, burnt sponge, carbonate of soda, and nitric acid, given in various forms, constitute the greater part of Dr. Jarrold's plan of cure.

To stimulate the function of the skin, I usually recommended a cold bath, formed of lime water, holding in solution a quantity of muriate of soda, to be applied once, and sometimes twice a day, during the whole period of indisposition.

To excite both the skin and muscles of the back, frictions, champfooing, and percussion, will often be found useful.

Although, without a single exception, the *children* under my care were improved by the use of the cathartic already mentioned, patients at and above the age of puberty have, in most cases, suffered from its application. In such cases, Mr. Abernethey's laxative pills will be found an agreeable substitute;—but as they contain a mercurial ingredient, great caution must be observed, lest, by touching the system, its irritability should be augmented, and a cure rendered more difficult.

One of the most useful results of the attentive application of strong extension, has been the discovery, that it is as applicable to *cases of caries*, as to those dependent on other causes. I have seen no case of *posterior* curvature, which did not cease to cause pain, so soon as it was subjected to the action of the spine-cart. Irritation ceased, the tenderness of the part departed, and where the legs were affected, they recovered their ordinary powers. In fine, to all appearance, there ensued a complete suspension of the diseased processes. The recent writers object decidedly to the use of suspension in carious cases, on the supposition, that there exists considerable danger of fracturing the spine at the diseased part, even after anchylosis has supervened. After the occurrence of anchylosis, there can be no good reason for using instruments, unless the disease should extend itself further. Where there is advantage to be derived from machines, I would use them, without much regard to such theoretical objections, because the objectors are not able to produce a single instance of such an accident arising from mechanical extension.

To demonstrate more clearly the utility of the plan of treatment proposed in this paper, I beg leave to describe a few cases.

On the 1st of February, 1824, I was invited by an eminent physician to see with him a case of curved spine. A. S., a boy about five years of age, was the subject of this disease. At that time, his occiput rested on the *vertebra prominens*, so as to prevent any portion of his neck from being visible from behind. The pressure

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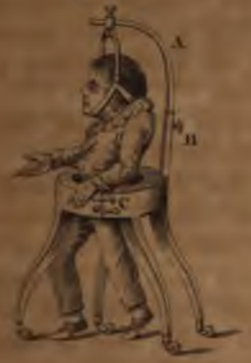

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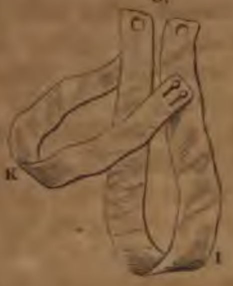

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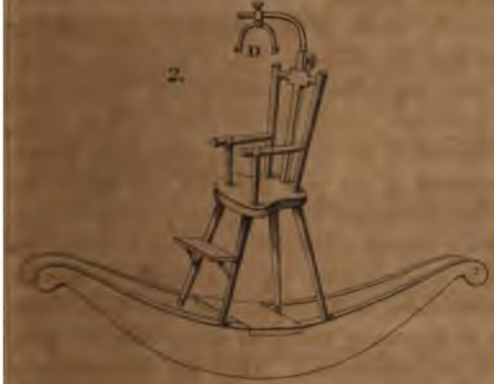

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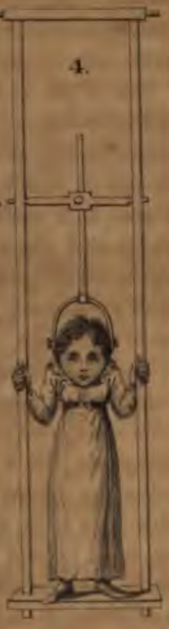

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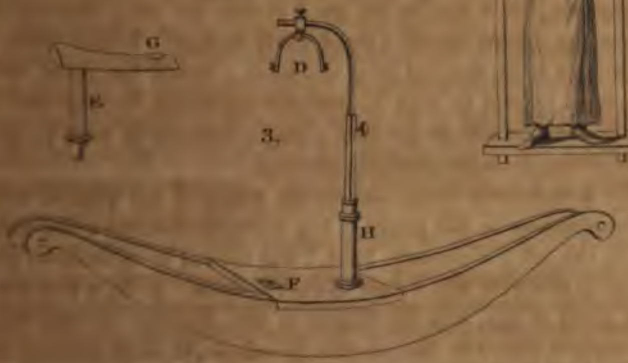

Wm. [illegible] del. F Kearny Sc.

of the head upon the space between the shoulders, had caused [illegible] painful excoriation. In endeavouring to cleanse the back of the neck, it was necessary to insert a wetted cloth edgewise, as any attempt to introduce a finger gave considerable pain. Besides this posterior curvature, which formed a very acute angle about the uppermost dorsal vertebra, there existed the serpentine or lateral curvature, so well described by Mr. Shaw. This curvature was convex towards the right shoulder above, and convex towards the left hip below, a direction of lateral curvature from which it seldom, if ever, deviates. At the angle caused by the *posterior* curvature, the patient felt, at times, severe pain, particularly when in motion. Indeed, so painful was a rotary motion, especially in bed, that he found it necessary to call for the assistance of an attendant, when desirous of changing his position. During the greater part of the day, he sought refuge from pain in bed, or in the arms of his mother or his nurse. His pulse was rapid, without force or regularity. Exacerbation of febrile symptoms in the afternoon, and colliquative sweats during the night, afforded proof of a hectic state of his system. His appetite was irregular, his tongue encrusted with a moist, russet-coloured substance, and his breath very fetid. His bowels were usually costive, but sometimes relaxed. At times he complained of *severe* pain in the epigastric region. His skin was, during the day, dry and rough, and was covered with bran-like spots, as if the cuticle were separated from it in scales. For a few days before the consultation, the child had lost, in a great measure, the power of deglutition. The water which he endeavoured to swallow, generally escaped from the angles of his mouth.

The remedies used during the previous treatment of this case, were laxatives occasionally, and afterwards the chalybeates, and some other tonic medicines. The child, before it became too enfeebled to endure exercise, had been directed to swing, by grasping a suspended bar of wood, and supporting its body by means of its hands and arms. This exercise was found to be too violent, and could not be continued long enough to produce beneficial results. It was less useful, too, because it did not act on the posterior curvature, seated above the scapulæ.

In consultation, we resolved to try the effect of cathartics, a generous diet, and such suspension as would relieve the patient from a portion of his weight, and at the same time permit him to take exercise. Accordingly, the cathartic of supertart. potass. and jalap was given every evening.* During its use, the tongue became clean, the breath sweet, the appetite and digestion good, the strength and spirits improved, the visceral pain gradually diminished, disappeared, returned no more; and one of the chief obstructions to a cure of the local disease was thus removed. To remedy the diseased state of the skin, the patient was bathed in lime water, holding common salt in solution: and to stimulate the disordered parts into more healthful action, the spine was rubbed carefully every day. The *mechanical deformity* remained to be prescribed for; and this was treated by the chair with *rockers*, and the spine-cart. After a short time, the child refused to sit in the chair, but continued to use the spine-cart for four hours a day. From the moment at which these means were applied, there was exhibited a gradual melioration of all the symptoms. The curve became less and less conspicuous—that which was *lateral* entirely disappeared; and there now remains of the *angular projection*, only enough to show where the disease had been seated.

On the 2nd of June, I deemed professional attendance no longer necessary; and to this day, the child remains robust, active, and cheerful, without any deformity, which would be observed by those who had not been acquainted with the previous history of the case.

Shortly after the commencement of the cathartic course, it was not thought necessary to continue it daily. Cathartics were then given on alternate nights, until I ceased to attend the case. Two or three times during the period of recovery, there appeared certain unfavourable symptoms, such as cough and impaired digestion; but the *daily* exhibition of the cathartic soon removed them.

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* After exhibiting this medicine in many different modes, I finally fell into the practice of leaving the regulation of the dose entirely in the hands of the nurse or mother. To do this, the apothecary was instructed to furnish half an ounce of powdered jalap, carefully mixed with one ounce and a half of supertartrate of potassa. The attendant was directed to divide a heaped teaspoonful of the powder into, in *this* case, four parts, and to begin by exhibiting one part, but afterwards to give more or less, according to circumstances, so as to produce more than one, and less than four alvine evacuations after each dose; So long as I caused the division to be made by an apothecary, the attendants seemed to dread any alteration of the doses—an alteration which they readily effected, when they themselves made the division.

Several other cases, resembling the above, in the *angular* and *lateral* curve, the impaired digestion, and roughened skin, have been treated with equal success. One of them, the case of E. F. fell into my hands on the 4th of September of the present year. The patient is, at the date of this paper, in good health, and rather more than two inches taller, in consequence of the straightening of the curve.

One of the most difficult and intractable cases I have yet encountered, was that of E. C. a girl four years old. This child had a posterior curvature, seated nearly in the middle of the back—and a serpentine curve so great, as to cause the lower ribs to repose on the crest of the os ilii of the right side. The projection of the shoulder and hip was such as to excite the notice and sympathy of every one. This child had been attended by two experienced and skilful physicians; who, after using rhubarb for a long time, proposed to the parents the use of the common stays, with steel rod and head piece. A careful inquiry into the effects of this practice in other cases, led, however, to objections, and the final abandonment of the scheme. In the meantime, certain cases, in which the practice detailed in this paper was used, came under the notice of the parents of the child; and with the full consent of both physicians, the little patient was placed under my care. The judicious treatment had previously given sound general health to the child, and it was well prepared to receive benefit from the spine-cart, &c. Observing some remains of cuticular roughness, and a remnant of constipation, purges and the lime bath were directed, and continued from the 18th of March, 1825, when I first saw the child, up to the present day. From that period, there has been, with two exceptions, a progressive improvement in the case. The child remained about four hours a day in the spine-cart, and was left at liberty during the remainder of the time. At present, the dorsal prominence is small, and apparently diminishing; and although the child still exhibits some lateral curvature, *when it is off its guard*, it is able to carry itself, when it chooses, nearly in an upright manner. While *in* the spine-cart, no curvature of this kind is perceptible.*

James H. a boy aged about seven years, was brought to me in May, 1824. He had evidently a disease of the middle dorsal vertebræ, by which the bodies of two, at least, of the bones, appeared to be affected. A shuffling gait, observed about six weeks before, led to an examination of the case, and a physician at New Castle discovered the curvature. In this case, one of our most eminent physicians advised issues; but as the mother was predetermined not to use that mode of treatment, the child was brought to me, to be placed in a spine-cart. One was accordingly obtained; but was not used regularly, because of the unwillingness of the boy to submit to any restraint. The progress of the complaint was rapid, notwithstanding the use of purges, baths, &c. At length, the lower limbs began to fail in their office, and the poor boy was compelled very frequently to throw himself, for ease, on his face on the floor. When he ascended the stairs, he was obliged to go on all-fours. At this time he expressed greater willingness to endure the restraints of a machine, because he found himself more comfortable when in one. In a few days, strength and facility of movement returned; and since that period, no increase of curvature has been perceived. His general health is now good, and he has a remarkably robust appearance. It may in this place be proper to remark, that in every case, except one, in which these machines have been applied, either to posterior or lateral curves, the tone and vigour of the system have been immediately restored, and the pain and tenderness of the parts more immediately concerned, have disappeared.

The following case, attended by Dr. Henry Bond, of this city, affords a remarkable instance of the good effects of the spine-cart, when applied with skill and perseverance.

The subject of it, Elizabeth O'Brien, was born on Christmas day, 1819, and walked when nine months old. In the course of her second year, *cholera infantum* of long continuance so debilitated her, as to prevent her from walking. Late in the autumn of that year, and during her recovery from the summer-complaint, the child's mother perceived a small protuberance about the middle dorsal vertebræ. The child was then subjected to the use of caustics, blisters, cathartics, &c. &c. For about a year, or rather more, the child continued to move on its hands and knees; and about two years ago, was able to walk, by resting her hands on her thighs above the knees, and continued this disagreeable mode of progression for nearly a year; when, by the application of *moxa*, such an improvement ensued, as enabled her to walk for a short time without the support of her hands. From that time until about the middle of September of the present year, she was without medical aid, and her disease continued its progress. The spine became more crooked, the sternum more prominent, so as to increase considerably its distance from the spine, and to lessen the *breadth* of the chest. The shoulders projected upwards almost to the ears.

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* In this case, the carrying a weight on the head will be used to rectify the *habitual* bending of the body; and if this should fail, the child will be kept for longer periods of time, in the spine-cart. It is, perhaps, worthy of observation, that in the progress of this case, also, when from unknown causes the child seemed worse, the *daily* exhibition of the usual cathartic removed the unfavourable symptom.

In this state Dr. Bond found her in the middle of September, and applied the spine-cart, ingeniously modified by himself. I shall now quote him.

"I elevated the rod as high *as she could bear* it. She became fond of it, and sometimes remained in it nearly the whole day. Before the 1st of October, the mother had raised it an *inch* higher, and there was so much improvement in her walking, as to attract the attention of her neighbours. In October I raised the rod about three-fourths of an inch. At the end of six weeks, she continued to improve, but not so rapidly as at first.

"November 13th, 1825. I have seen her to-day, and find her still improving. The protuberance of the spine is much smaller; the shoulders are becoming broader, and approach very nearly to their natural conformation. She is apparently much taller, and less deep in the chest. Before the application of the apparatus, she dragged one foot in walking; and when she stood up, the heel of that foot did not touch the floor. She now uses one as well as the other. The mother made her corsets, which she has worn for a few weeks, and which are probably beneficial. The size of the chest is so much lessened since the corsets were applied, that they are now too large for her, and are loose when the edges are drawn together. This does not arise from loss of flesh. She is as yet placed in the apparatus every day, but is confined in it for a shorter period than at the commencement of the treatment. Her unwillingness to remain in it does not appear to arise from any pain or distress produced by its use, but from the confinement and restraint, which interfere with her amusements. A more assiduous use of the apparatus would have undoubtedly produced a greater effect; but considering the long standing of the case, its use has already equalled my most sanguine expectations. The apparatus has been elevated about one inch to-day, as I am informed by the mother, and it is my intention to continue its use for several months."

ARTICLE VI.—*A case of temporary loss of power over the Muscular System. Arranged from the Notes of* Dr. MONGES, *of Philadelphia. With Remarks, by one of the Editors.*

A. I. M. about 54 years of age, of a sanguine nervous temperament, and who had been labouring for some time under chronic inflammation of the lungs, was seized unexpectedly, in the year 1813, with apoplexy; from which, by means of the usual remedies, he was relieved. His left side, however, remained imperfectly paralyzed—sensation continuing unimpaired, and the power over the muscles not being completely lost. Nevertheless, whenever he attempted to make use of the limb, it felt, to use his own language, "as if it did not belong to him." From the period of this attack, he continued to complain of a great determination of blood to the head. The carotid arteries were sensibly enlarged, and their pulsations, as well as those of the vertebral arteries, morbidly increased; and when he inclined his head on his pillow, or against a wall, or back of a chair, they became very distressing. Independently of this, he experienced so unconquerable a drowsiness, as to fall asleep in the midst of the most entertaining conversation. Under these circumstances, he was much troubled with noise in the head; which he very often compared to the sound of a kettle drum at a distance, and could not incline his head in the least degree downwards, without instantly suffering from vertigo.

It is unnecessary to detail the treatment adopted for the removal of this morbid state, as it did not vary from that usually resorted to in similar cases. Nor should pains have been taken to detail symptoms which must be so familiar to all practitioners, had they not preceded and accompanied others of less frequent occurrence, and which, it is believed, will not prove destitute of interest to the readers of this Journal.

About a month after the attack of apoplexy, and whilst suffering under the cephalic affection just described, the patient presented the following symptoms. When in a recumbent posture, and laying on his back, he would suddenly lose all power over his muscular system, and was, in fact, in a state allied to paralysis. If his eyes were open, as they often would be, at the moment of the attack, he saw perfectly all that was going on around him; and always heard distinctly every thing that was said near him, as well as the piano in the parlour under his bed-chamber, or the servants conversing in the adjoining room. During these attacks, the intellectual faculties acquired activity. Entertaining the idea, that this state was the forerunner of death, every object of interest to him would revert to his mind with great rapidity. His children would be a subject of frequent thought; and in very many instances, circumstances that had entirely escaped his recollection, and of which, in another condition, he would probably not have thought, would recur to his mind. Whilst thus situated, his ideas were as clear as in the interval of the fits, and the recollection of them afterwards was perfect. He often made every effort imaginable to speak or move, but invariably failed in the attempt. Nor did he experience any unpleasant sensations in any part of his body, with the exception of the cerebral symptoms already described; but the mental anxiety, arising from a reflection on his present condition, was inconceivably great.

In respect to the duration of the paroxysms, it is difficult to form a correct idea; though, from many circumstances, the patient is led to conclude that it did not exceed ten or fifteen minutes; and their cessation was announced by a sensation of pricking in the skin of the feet, which, in a very few seconds, pervaded the whole body, and extended as high up as the scalp. Whenever this occurred, the power of volition suddenly returned; and the patient, happy to be freed from so distressing a state, and aware that it never returned whilst he remained in an erect or sitting position, would spring out of bed, and make a trial of his faculty of speech. These attacks never occurred more than once in the course of four and twenty hours; sometimes in the day, at others in the course of the night; nor did they manifest any regularity in respect to the intervals between their return.

After distressing the patient in the manner described, during more than two years, they finally disappeared, together with the cephalic symptoms to which we have alluded. As the assistants were never aware of the exact moment of the attack, it was not ascertained whether the limbs would retain, as they do in catalepsy, the position in which they are placed; but from his feelings, and inability to govern his muscles, the patient is inclined to the belief, that, had the experiment been made, such would have been found the case. It is proper to mention, that the patient recollects to have had, when only seven years old, an attack bearing some analogy to the disease we have described. It seized him whilst walking—continued but a few moments, and did not appear again until the present attack.

REMARKS.

As we are familiarly acquainted with the subject of the foregoing case, we shall take the liberty, with the permission of Dr. Monges, to subjoin a few remarks on this very interesting malady.

A little reflection, we trust, will be sufficient to show, that the disease just detailed bears some analogy to catalepsy, and to the morbid state described by many authors under the name of *ecstacy;* since in both these there is a complete loss of power over the muscular system. At the same time, however, it cannot have escaped attention, that it presented some phenomena which are not met with in ordinary cases of catalepsy. Thus, in catalepsia vera, there is an instantaneous loss of sensation, as well as of power of volition—the patient neither hears nor sees, and on recovering his senses, has no recollection of any thing which occurred during the paroxysm. The disease detailed, presents a stronger resemblance to the second form of malady we have mentioned above; we mean ecstacy. But even with ordinary cases of this malady, as described by authors, it differed in some respects.

It must be familiar to most of our readers, that there exists in medical writings, no inconsiderable confusion on the subject of ecstacy, as the term is employed by authors to denote very different states of the system. Thus, by HIPPOCRATES it was made use of to denote alienation of mind, or even the delirium of acute disease; whilst by SENNERTUS and SCALIGER, it was regarded as synonymous with enthusiasm. By others again, it is employed to designate "a state of the brain, during which the individual, occupied with one idea only, and given up to the contemplation of one object, becomes insensible to the action of all other stimuli." By which definition, it appears to be held by them as analogous to a state of revery. Most commonly, however, at the present day, the term is had recourse to, to signify a condition of the system having some resemblance to catalepsy.

As might have been expected, some nosologists, in their great eagerness to discover and frame new orders and genera, have not scrupled to constitute this disease into a separate genus, distinct from catalepsy. This has particularly been done by SAUVAGE, GOOD, YOUNG, &c. Some other writers, among whom we may signalize MEAD, CULLEN, and COOK, have regarded it as a species or subdivision of apoplexy; and Dr. CHEYNE, of lethargy. A majority of writers, however, agreeing in sentiment with VOGEL, BURSERIUS, and PINEL, have regarded it, we believe not improperly, as an imperfect or spurious catalepsy. The first variety of SAUVAGE, *ecstatis catoche*, is evidently the catalepsy of VON HEERS and of TULPIUS. Speaking of ecstacy, MOTHERBY says, "It is considered as a species of catalepsy, with this difference, the cataleptic has no perception of what passes during the paroxysm, nor any remembrance thereof when it is over; the ecstatic remembers the ideas perfectly which he received during its continuance." The same definition of the disease has been given by Dr. PARR; and at a still later period, by NYSTEN. But although in their description, we discover some resemblance with the case before us, we find, on examining the writings of Sauvage, of Bosquillion, &c. that other symptoms are enumerated as appertaining to ecstacy, which were not noticed, and others wanting which we may safely infer would have been found in the present case, had an experiment been made. Thus, agreeably to the first of these writers, ecstacy is distinct from catalepsy in this respect, that although the limbs of the patient remain in the position in which they happened to be at the moment of the attack, they do not assume the one in which they may be placed subsequently.

According to these authors also, sensation is destroyed. Many cases described by Sagar, Hoffman and other writers, might be cited in support of the correctness of this statement. Dr. Good, one of the latest writers on the subject of catalepsy and ecstacy says, in his study of medicine, "in both cases the torpitude of the external senses appears to extend to the mind, for the patient, on returning to himself, has no recollection whatever of any train of ideas that may have occurred to him during the fit." The difference between the two diseases being, agreeably to him, that in ecstacy the muscles are thrown into a rigid and permanent spasm, not incurvating the body as in the different modifications of tetanus, but maintaining it erect from an equal excess of supply (of nervoüs fluids) to the extensor and plexor muscles; whilst in catalepsy, on the contrary, while some muscles appear sufficiently supplied, (with the motific fluid,) the action of others, and even of the involuntary ones, is often peculiarly weak. Whence also, the limbs, instead of resisting external force, yield to it with readiness, and assume any position that may be given to them. In another part of the same work he says of ecstacy, that in it the mind is dead to every thing but the train of ideas which immediately constitutes the subject of revery.

It must be evident to every one, that Dr. M's case differs in many respects from the description of ecstacy as given by the foregoing writers; since the patient so far from being affected with a torpitude of the senses or mind, or having only a recollection of the train of ideas which immediately constituted the subject of revery, retained the remembrance of every thing that occurred around him, and saw and heard as well as in health.

The author of the article catalepsy in Rhees' Cyclopedia says, that frequently in that disease, the loss of sense is only partial, and in some instances the senses all remain undiminished, while the voluntary motions are altogether suspended; so that although the patient is conscious of every thing that is passing around him, he is unable to speak or move, or in any way make known his feelings or wishes. Dr. Good also has remarked, in treating of catalepsy, that some examples of ecstacy, and even of catalepsy are met with, in which some of the senses, mental as well as corporeal, do not associate in the general torpitude. This circumstance was noticed by some of the older writers. More than a century ago, Sennertus, who, like most of the ancients, confounded the two diseases, says, in his description of catalepsy, that when the disease is not violent, the patients see and hear in a *feeble degree*, and retain the recollection of what they have seen or heard. But he adds, they have neither the power of speech, touch, or motion. Tissot, regarding ecstacy as a species of revery, and thinking that it is usually a feigned disease, divides catalepsy into three species: 1st, the perfect catalepsy, or that in which there is a complete loss of the senses: 2d, the imperfect, or that in which the senses are retained to a certain degree: 3d, the compound, in which the disease is complicated with symptoms appertaining to other diseases. (Traité des nerfs et de leurs Maladies, tom. 3, p. 2.) It is evident that the second species comprises the form of disease now denominated ecstacy, and that it is in this class we must include the disease described by Dr. Monges. In a very singular case mentioned by Tissot, the patient did not see, but sometimes was enabled to hear sufficiently well to recognise several of those around her by the sound of their voice. (p. 15.)

We find in Galen (Comment in Prorrhetic, l. 1, ch. 56,) the case of one of his pupils who was attacked with a similar disease, occasioned by intense application to study. He remained motionless and stiff as if he had been made of wood. He could not speak, his eyes were open and fixed. When he recovered his senses, he informed his attendants that during the paroxysm, he heard and saw, though imperfectly; and even described a part of what had been done around and for him. But it does not appear, however, that even in these cases the operations of the mind were as perfect as in the case detailed above, and that the mind could, as in the latter, be occupied with a reflection on the condition of the body. A much more interesting case, and which approaches nearer to Dr. M's, is described in DUNCAN's Medical Commentaries. (Vol. 5, p. 436, Am. Ed.) In this case the patient, a female, remained more than four hours in complete possession of her mental faculties, but deprived of the power of moving a single muscle of her body. She was in the distressing condition of finding herself given up by her attendants as dead; of being laid out, with her toes tied together and her chin tied up; and of hearing certain arrangements for her funeral talked of: yet she was unable to make the slightest sign of her possessing sense, feeling and life. But even in this case there were some symptoms absent in Dr. MONGES's, as the pulsation of the heart and arteries, in the former, were absent; whilst in the latter, the internal sensation of pulsation, especially of the arteries of the head, was very evident. Dr. FITZPATRICK's patient also, according to his statement, could not see, whereas sight was unimpaired in Dr. MONGES's. Nor did the disease in both patients differ less in the number and duration of the paroxysms than in their mode of termination.

The predisponent causes of the present case were precisely those of ecstacy, as mentioned by Dr. GOOD; viz.: a highly nervous or irritable temperament. According to the same author, the exciting or occasional causes of ecstacy are more usually of a mental character; as profound and long continued meditation upon subjects of great interest and excitement, terror or other violent emotions of the mind. It seems also to have proceeded, like most spasmodic affections, from various corporeal irritations, and particularly those of the stomach; suppressed menstruation, repelled chronic eruptions, and plethora. In a case which occurred in this city not many months ago, the patient had but one paroxysm, and it seemed to depend on irritation of the bowels, arising from the presence of tænia. In another case, the exciting cause seems to have been a violent emotion of the mind. The attacks recurred frequently, and were often excited by very trifling causes, such as the smell of an extinguished candle, &c.

In respest to the pathology of the disease we have described above, we avow our ignorance. The diseases of the nervous system are so involved in obscurity, that no one, as yet, can pretend to have offered a satisfactory explanation of their phenomena. It is true, that the researches of ROSTAN, LALLEMAND and OLLIVIER, have thrown some light on the subject of the affections of the brain and spinal marrow, the primary seat of most nervous affections; but much yet remains to be done. All that Dr. Good, and other theorists, have said on the subject of the nature of catalepsy and ecstacy, amounts to nothing: nor do we think much more will be accomplished until we are better acquainted with the physiology of the nervous system. In the case above described, the exciting causes were very evidently local irritation and plethora of the membranes or substance of the brain; unless the irritation of the lungs may be thought to have had some influence in the production of the symptoms. The imperfect paralysis and cephalic symptoms plainly indicate this. But what the precise alteration was, and how the nerves of volition and perhaps of sensation could be so suddenly affected and relieved, the mind remaining unimpaired, we leave to the sagacity of our readers to determine. It differs widely from the majority of cases of ecstacy and catalepsy on record, in the frequency of the fits, though more particularly in the manner in which they went off. The duration of the fits in ecstacy, says Dr. Good, varies from a few hours to two or three days. The patient rouses as from a sleep, seems languid and complains of nausea and vertigo. In the present case, on the contrary, the fits never continued more than a few minutes, and their cessation, so far from being followed by languor or any unpleasant symptoms, generally left the patient with comfortable feelings, and stronger than before. The sensation of pricking, felt at the termination of the paroxysm, is not mentioned by any writer we have consulted.

Notwithstanding the difference of symptoms detailed in the above case, and which may occur in the various cases of every disease, we are inclined to regard Dr. M's case as a variety of ecstacy, and this latter as a variety of catalepsy, and such we know to be the opinion of Dr. Monges. In concluding, we must beg to remark, in order to prevent any suspicion on the part of the reader, that the disease was a feigned one, that it occurred in the person of one of the most eminent physicians of this city, alike incapable of being deceived by his imagination, and of imposing on the credulity of others.

ARTICLE VII.—*Practical hints on the use of the Acetate of lead, in Dysentery, Cholera Infantum, &c. By* THOMAS D. MITCHELL, M. D. *of Frankford, Pennsylvania.*

A celebrated author,* speaking of the deleterious properties of the acetate of lead, observes, "that hardly any practitioner will now think of employing any preparations of lead as internal remedies." Contrasting this sentiment of a man of no ordinary foresight, with the experience of later times, we are led to admire the progress of medical science, and to anticipate a degree of perfection as not very remote, which may cover with the mantle of ignorance and folly, the practical views of the age in which we live.

It is not the design of the writer on the present occasion, to inquire fully into the uses of sugar of lead, but to restrict himself to a few points, in which the importance of the remedy has appeared to him to be considerable.

The earliest writers on the internal use of the sugar of lead, seem to attribute its remedial powers to a sedative agency, and this characteristic property appears to have guided the modern practice in the employment of the remedy in the various *profluviæ*. A certain Dr. HUNTDERMARK, sometime in the sixteenth century, wrote a treatise, *de sacchari saturni usu interno salutari*, in which he enforces its efficacy in abating high febrile action. Now, independently of any astringent property evinced by the acetate, it appears to be difficult to explain its curative agency, unless its sedative character be brought into the account. I have exhibited the medicine in cases where the successful issue might be properly explained on the ground of sedative action, but I have seen it equally fortunate in its operation, where the idea of such action could scarcely be admitted.

Such being some of the difficulties involved in the modus operandi of the acetate of lead, I propose briefly to state, apart from theory, what are my views of its utility in dysentery, cholera infantum, and a species of sore mouth which appeared somewhat as an epidemic, in the last autumn, and which resisted all the usual modes of treatment.

I had frequent opportunities of testing the efficacy of sugar of lead in the treatment of dysentery, in the last autumnal season, and my experience is fully confirmatory of the statements furnished by the few practitioners who have employed the remedy in that disease. I gave the medicine in no case until after the bowels had been freely evacuated by means of suitable cathartics, and then I administered it in combination with opium or with calomel and opium. I did not find it necessary, however, to give the acetate in such large doses as Dr. HARLAN employed,* and it appears to me that this necessity will always be obviated by the free exhibition of active cathartics and emetics. My plan has generally been to combine calomel and ipecacuanha, so as to produce the joint action of vomiting and purging, and that several times repeated. To an adult I have given five grains of calomel and six of ipecacuanha, every half hour, until three or four doses were taken, and the operation of these has been followed by an ounce and a half of the sulphate of magnesia. By pursuing this method (which must, of course, be reduced according to age, &c.) I have been able to succeed in removing the subsequent symptoms of pain, bearing down and bloody discharge, by employing one or two grains of sugar of lead, in combination with as much opium, once in three or four hours. Nor has this plan been restricted to adults; on the contrary, infants under eighteen months of age, have been treated in the same way, and the issue has been equally happy. Formerly, I managed dysentery precisely in the same manner as in the late season, with the exception of the use of sugar of lead, which I am convinced has improved the treatment, by accelerating the cure, and that too without any attendant disadvantage.

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* Dr. Cullen.

None of the cases in which I gave the sugar of lead, were of such a character as to require or admit of the use of the lancet. When circumstances justify venæsection, the acetate should not, in my opinion, be administered until after depletion by the lancet, and also the evacuation of the alimentary canal, as already stated. If much febrile action be present, the sugar of lead can do no essential service, until that action be properly subdued. Because, the *vis a tergo* simply considered, is amply sufficient to maintain a plethoric state of the small vessels on the inner surface of the intestinal canal; and the bloody discharges resulting from that plethora, as well as the actual inflammation of the parts, can never be effectually controlled so long as the excessive action of the blood vessels continues. In these respects, there is a close similarity to the case of violent inflammatory affection of the eye, in which leeches and cupping are not only inadequate to afford relief, if resorted to previous to general depletion, but are actually the occasion of augmenting the disease.

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* Medical Recorder, vol. 5th.

In a few cases, I administered the acetate in the form of julep, but am inclined to think that this is not so good a mode of exhibition as that above stated.

Several cases of bloody discharge from the bowels, have fallen under my notice, which could not properly be called dysentery, but which were speedily relieved by the acetate of lead and calomel conjoined. Two of the cases were infants within the month, and several others were from six to twenty months old. In all these cases, the evacuations were very numerous; sometimes consisting almost exclusively of blood, but more frequently of blood and thin watery feculent matter, mixed. The pain accompanying these discharges was not greater than usually attends a common bowel complaint. To the infants within the month, I gave about half a grain of calomel with a fourth of a grain of the acetate, morning, noon and night, and the disease yielded completely in less than two days.

In *Cholera Infantum*, the acetate has proved to be a safe and useful medicine. I am not aware that we have on record any recommendation of this article in cholera; at all events, the disease and the remedy are not to be found associated in any of the books with which I am conversant. Far be it from me, however, to put in the shadow of claim to originality in this matter. Mine is the humble task of walking in the path which another has marked out. The individual, who first exhibited the sugar of lead in cholera infantum, so far as my personal knowledge or general information extends, was an obscure practitioner in Montgomery county of this State. I learnt from him in the year 1818, that he had been in the practice of administering the acetate in small doses, for several years, both in dysentery and cholera, with great success. His commendations led me to make trial of the remedy, and the result was equally fortunate. In all cases, I combined the acetate with calomel, which latter had previously been the almost exclusive remedy with which I encountered cholera. To an infant from ten to twenty months old, I gave from half a grain to a grain of calomel, with from an eighth to a fourth of a grain of the acetate, every three hours, and I have seldom found it necessary to continue the treatment longer than three or four days. The discharges are soon lessened in frequency and quantity, and much altered in their consistence and general aspect. I prefer, because most readily administered, the solid form, in giving medicines to children, but have occasionally combined the sugar of lead with calcined magnesia and mint water, in form of julap. The best way of getting infants to take the above, or any other powders, is to put them on the end of a finger previously wetted with molasses, and then to introduce the finger into the child's mouth. by which means nothing is lost.

Exhibited in the cautious manner above detailed, I have not known any unpleasant circumstance to attend the use of the sugar of lead, in a single instance; nor do I believe it to be, at all, a dangerous medicine in such cases.

I have not ventured to give the acetate in those cases of cholera in which the stomach mainly was affected, and where only a trifling looseness of the bowels was present, because I have found the calomel alone, to be the most suitable remedy. But where the purging is almost incessant, watery, and greatly debilitating, I have seen the sugar of lead, in conjunction with calomel, produce the most salutary effects.

What might be the effects of injections of the acetate, both in dysentery and cholera, I have not been able to determine; although I cannot doubt of their utility thus exhibited, if circumstances should exist to preclude the administration of the medicine in the more usual way. It is desirable at all times, to be in possession of remedies which have as little bulk and disagreeable taste as possible, and therefore further trials of the acetate of lead are desirable, inasmuch as the establishment of its remedial character, in diseases of the alimentary canal, would tend greatly to remove the supposed necessity of drenching our patients with large and nauseous doses.

I have hinted at the use of sugar of lead in a peculiar soreness of the mouth, which prevailed very recently, to a considerable extent, in my neighbourhood. This affection, though free from danger, was very painful, and almost entirely confined to females. It consisted, chiefly, in an unnatural redness and heat of the lining membrane of the mouth and fauces, attended with excoriation and occasionally small ulcers. It continued, generally, from six to eight days, and the ordinary remedies for similar affections, appeared to be of little service. I was led to make trial of the sugar of lead in these cases, by a statement not long since made of the efficacy of the article in checking profuse salivation. It occurred to me, that its effects there, depended on its sedative character, and that, as in the sore-mouth disease, there appeared to be some degree of inflammatory action, the same remedy might be applied on the same principle. I accordingly directed from six to ten grains of sugar of lead, to be dissolved in five or six ounces of rose or rain water, and the solution to be used frequently as a gargle. The effects of this simple remedy were quite astonishing; the disease was almost immediately checked. I have employed the solution in a sufficient number of cases to be satisfied of its efficacious and salutary tendency.

Thus have I presented very briefly, and without decoration, the result of my experience in the use of the acetate of lead in several morbid affections. To those who have more leisure, and greater inclination for the task than I profess, I cheerfully resign the work of harmonizing the practice I have detailed, with the theorectical views of the day; believing at the same time, that he who communicates the result of his observations faithfully, does his profession a better service, than he who expends the vigour of his intellect in defending theories.

ARTICLE VII.—*Account of a Catalepsy produced by Opium—Related by* CHARLES D. MEIGS, M. D.

October 30th, 1823. T. S., aged 27, went out after breakfast, in June last, to purchase some articles for his store. He made the purchases, and, being on his return, became suddenly bewildered, turned into a wrong street, wandered through the city all day, and strayed all night through lanes and by-ways in the country, where he was met by a man who knew him, the next forenoon: being asked where he was going, "home," said he, but knew not where he was, or how to find his way home. He was brought to his house, and was rational, but very dull and stupid; being bled, he recovered in a day or two.

Last Tuesday night, being costive and afflicted with headach, he got some pills which purged him. Wednesday and Thursday his head ached, and he vomited thick, yellow bile, several times, but attended his store till 5 P. M., on the latter day, when he went up stairs, undressed himself, and got to bed. At 10 o'clock, P. M., his family being unable to wake him, became alarmed, and sent for me.

He seemed to be in a profound sleep; countenance and respiration perfectly natural; pupil much contracted; pulse large and regular, at 128 per minute. I forced* open his mouth with a spoon-handle, and found his tongue clean, moist, and of a healthy red.

Having lifted up his arm, it remained in any posture in which it happened to be left, no matter how apparently uneasy. The arms were very easily moved. I lifted his head off of the pillow; it remained so without falling gradually down: if he were made of wax he could not more steadily preserve any given attitude. The hands were cold, and the nails bluish.

No shaking, or even severe pinching and hallooing in his ear could make him evince any sign of sensation. Water sprinkled on his face caused his eyes, which were closed, to be closed more tightly, as in winking.

Supposing he had taken laudanum, I made all enquiries of the family, but these were almost hooted at, and I gave up the idea the more readily, as his steady, and rather religious turn, seemed to make it unlikely; in addition to which, I recollected his former bewilderment, and, therefore, began to attribute his present state of oppressed brain to an excess of that morbid condition which had before brought him under my notice.

I bled him 20 ℥, applied cloths out of iced water, to his head, two large sinapisms to his legs, and one to the epigastrium. Induced by the cataleptic condition, I twice gave him some Hoffman's anodyne, without any effect, as *might* have been expected.

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* Tissot relates several cases in which the jaws were strongly closed.—*Œuvres.*

A stimulating enema was with difficulty administered, on account of a spasmodic closure of the sphincter muscle: it did not return.

In half an hour after, I counted the pulse; it was 112, which is 16 less since the bleeding. The mustard acted very powerfully on the skin, but he did not feel the inflammation, even when harshly rubbed.

Whatever deglutition was effected was the result of our perseverance, for he would not swallow a drop until several spoonfulls were poured into the pharynx, the tongue being pressed down and forwards with a spoon.

At 12 P. M., Dr. Emlen came to my assistance, the man being no better. We gave him tartar emetic, of which he took 10 grs. in four doses, at intervals of 8 minutes. It produced no vomiting or apparent nausea. As the tartar emetic began now to cause considerable borboygimi, we desisted, fearing the effects of sudden and profuse evacuations from the bowels, which sometimes produce very bad symptoms. At 3, A. M., the cataleptic symptoms were somewhat less evident: a second enema now produced purging, which was continued by unconscious discharges. At 4, A. M., six cups on the head bled very freely, but he did not wink at the stroke even of the scarificator. At 6, A. M., 2 episp. to the legs.

October 31st. At 9, A. M., he opened his eyes for the first time, but closed them after staring at different objects, without speaking.

At half past 3, P. M., he opened them again, and having said, "I took laudanum," relapsed into stupor or obstinacy, and remained so till seven o'clock, when he had violent pain from strangury. The catheter was necessary to relieve him of a large accumulation of urine. The catalepsy was gone, and he had no return of it.

November 1. He says ℥ ij were taken at 5, P. M.; it was weak, having been made in the house.

He recovered, soon after, a good state of health.

I think this case interesting by its relation to the attempt at suicide by opium, and also to Dr. CULLEN's opinion of catalepsy, viz.: that it is a simulated disease. Dr. C. arranged it with genus apoplexy; it constitutes his 8th sp. apoplexia (cataleptica) muscularis, sub artuum a vi externa motu contractilibus.

He says he never saw any but simulated catalepsy, and believed that it is generally a simulated disease. He preferred, therefore, to place it as a species of apoplexy, rather than make a new genus of an affection so rarely seen, variously described, and frequently (at least) simulated. Vide Synop. Nosol.*

I am sure that under all the severe proof to which they were put, my patient could not have wholly suppressed his feelings if he had retained any sensibility; and I have no doubt that this was a genuine case, produced by *opium*. Dr. Darwin mentions a case which occurred after the patient had taken much mercury: he recovered in a few weeks. Vol. II. 136. Dr. Heberden's case lasted several months, returning morning and evening, almost every day. Commentaries 291. There is a curious case in the Dict. des Sc. Med. Dr. Lubbock, of Norwich, relates a most interesting case of catalepsy, in the Edinburgh Medical and Surgical Journal, for January, 1805. He has had repeated proofs of the genuineness of the symptoms which characterize this singular affection, and has seen two strongly marked examples in males. He seems to have been unsuccessful in the management of his case which had subjected the lady to frequent attacks, during about twenty months. He tried vol. alkali, galban., small doses of calomel, steel, digitalis, a strong emetic, and electricity, without effect. Travelling appeared to diminish the violence and frequency of her paroxysms. There were several peculiarities; among which was "something of the irregularity of the motions of the under extremities that characterizes St. Vitus's dance, but which soon went off."

Tissot, in his treatise, details many evidently genuine cases.

Galen relates an undoubted case of the disease. Fernelius tells of a young man who would be seized while writing, and continue to hold the pen in his hand, looking at the paper, as if in deep meditation, but who, being touched or called, was found deprived of all sense and motion. As far as I know, the disease has been very little noticed by late writers. I knew of a case in which the gentleman was frequently seized while in the street; he did not fall down, but stood* still, till the current of his volitions was restored, and then walked on without inconvenience. While speaking, the paroxysm would sometimes cause him to preserve his attitude and gesture.

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* "Sennert," says Tissot, "croyoit que de cent medicins il n'y en avoit pas un qui vit une catalepsie, il auroit pu dire, mille."
"J'ai connu plusieurs medicins trés agés qui ne l'avoient jamais vue."—*Œuvres.*

The tonic spasm which we often meet with in hysterical women is, I think, a sort of catalepsy; in such cases I have often observed the patient to be rigid for ten minutes at a time, and once for several hours.

The question of most importance in relation to catalepsy is, how shall we cure it? Certainly the stimulant and antispasmodic medicines which have been mostly relied on, are not of great efficacy, since so many cases have been obstinately protracted, as Dr. HEBERDEN's, Dr. DARWIN's, and Dr. LUBBOCK's. The fact mentioned by the latter of something similar to chorea in his case, together with the acknowledged efficacy of purgatives in chorea, and of cathartic medicines in the tonic spasms of hysteria, which is closely allied to catalepsy, has suggested to me the idea that purgative medicines might be advantageously employed in our disease. The almost certainty with which chorea yields to HAMILTON's plan of treatment, renders the attempt to cure catalepsy, on the same principles, more hopeful. It should be recollected always in undertaking such a method, that great perseverance is necessary, and that the final success, though protracted, and often seemingly unattainable, is most generally suddenly obtained at the close: such has been my experience at least.

I lately cured an obstinate chorea, of many months standing, by purging the young lady every other day with a teaspoonful of jalap and cream tartar. Three weeks and a half had elapsed before any decided benefit was discernible: at the end of the fourth she was pretty well.

TISSOT assures us that "les emetiques et les purgatifs à moins de preuve evidente de saburre dans les premires voies sont plutot nuisibles qu'utiles."—Œuvres.

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* TISSOT says, J'avoue que je ne crois point ordinaire que les cataleptiques poussés marchent, and je ne le vois que dans les descriptions générales. &c. But he relates the case of the girl Guerdin, who stood erect during the paroxysm, as well as that of M. V.—*Œuvres.*

ARTICLE VIII.—*Remarks on the Theory of Pain.* By FELIX PASCALIS, M. D. *of New York.*

PAIN is a sensation of soreness, occasioned in some parts of the living body, by the contact of certain offensive or destructive substances. It may, also, be created by an internal cause or condition of disease, and transmitted to the sensorium through the ramifications of the nerves. Its immediate cause is, therefore, anterior to the consciousness of it; and as it is evident, that two different agencies, the one *external*, and the other *internal*, can equally create pain, it is natural to infer, that the pathological change effected in a part or organ, which has become painful in the first case, differs essentially from the second, and that neither can be accurately described or ascertained.

Whether slight or acute, pain mars the enjoyment of life; it disturbs the animal functions, it impairs our perceptions, it is contrary to all the purposes of existence; but it is a salutary warning of the danger, or of the diseased condition, which threatens or is assailing our life; and for the medical observer, it opens an extensive field of indications, inferences, and prognostics, which he can turn to the greatest advantage, and which it is our present object to investigate and to explain.

It may be objected to our statement, that there are pleasurable sensations, which, by their intensity and continuation, may become more intolerable than ordinary pain. Again, that in many natural acts, pain is subservient to relief; that it concurs to the formation and preservation of life; that all animated beings are endowed with the power of organic exertions, which, however painful, are, nevertheless, instrumental in reviving healthy functions, which were suspended. All these positions are true, but they are exceptions; and as they are limited, each of them to certain particular cases, they cannot invalidate our present subject, restricted as it is to the purpose of judging and removing the causes of disease.

1. Pain indicates to our perception the characteristic forms which appertain to the different parts and tissues from which it originates; and this instinctive idea is so far unerring, that no suf-

ferer or patient can be mistaken or deceived, unless his mental faculties are impaired or destroyed.

2. An ordinary headach differs from that *cephalalgia* which is called *clavus hystericus*, and sometimes excites furor or madness; nor does this in any way resemble a violent toothache. Cholic is another sort of pain, nowise resembling a paroxysm of *iliac passion*, nor like an attack of *enteritis*. The gout may often be confounded with *rheumatism*, by those who have never experienced the first. None of these pains can be compared to those from burning, scalding, nor to the acute sensation excited by a knife cutting through flesh and limb, &c. It is remarkable, that in no language does there exist a vocabulary to describe one pain different from another. Except in degree, the sufferer can only designate the part, or the seat of it—how far it extends—how deep it is felt.

3. We have stated that pain was transmitted to the sensorium by and through the ramifications of the nerves. *Pleasure* is transmitted in the same way, and is actively felt, so long as the power of transmission is kept up by the laws of vitality. It must follow, therefore, that painful and pleasurable sensations all require sound and healthy organs, with a full possession of their living attributes; and that in proportion to the impaired state of their functions, or to their decay, pleasure or pain must ultimately be diminished or abolished. It is, therefore, our axiom, that the greater the pain, the greater must be our confidence in the power and energy of life.

4. The celebrated nosologist, Sauvage, and his followers, were strangely mistaken, by constituting a distinct class (dolores,) of those diseases that are more particularly marked by pain. Pain, of itself, is not a disease, but only the effect of disease; its absence, when it ought to exist, is a greater proof of disease; and it is by impairing the functions of life only, that pain can create a disease.

5. It is another law governing pain, that its development or intensity, is in direct ratio to the more minute expansion of the nervous and muscular fibrils entwined together, by heat, by swelling, and by imperfect granulation of the part affected. The division of a large or visible nervous cord, or its contact with any offensive substance, are much less painful than they would be on the smallest filament, extended to external sur-

faces, or to any extremity of the body; because these are connected with many more plexuses and ganglia, and even with the whole nervous system of a region, or of a limb. Thence it happens, that excrescences or fungosities in the bottom of ulcers or cancers, and carcinoma, are exquisitely painful, and constitute the torment of such as are affected with those diseases.

6. Pain, inflicted by wounds, by fire, blows, and by surgical instruments, seldom can disturb the laws of the animal economy. In those ages of ignorance, when torture was legally applied, in order to extort the confession of a crime, the jurisdictional practice was authorized by its harmless effect on health and life, unless it was continued too long, or produced organic lesions; for which medical men were appointed, to moderate or suspend an undue degree of it!!! Extended lacerations of flesh and limbs, deeply corroding ulcers, tearing and comminuting of bones, appear not to have any direct agency in producing disease. It is not, therefore, irrelevant to observe, that gouty and rheumatic patients, after long and repeated doleful paroxysms of their complaints, are proverbially cited as patterns of perfect health; and, if impaired, it has been oftener by regimen and medicines they were submitted to, than by their incessant sufferings.

7. There are obscure pains, or certain compound sensations and feelings, in hysteria, melancholia, &c. which a sufferer always refuses to describe or to compare to any kind of ordinary and known sensation It appears that such pains so far vitiate all feelings in life, as to make it horrid and absolutely intolerable. It is certain, that many individuals thus affected, have, and do daily, commit suicide; and even that they execute it, after having, with reflection and ingenuity, escaped detection and vigilance—having shown no mental derangement, or illusory impressions of grief and terror! In many instances of this *zoophobia*, of which we have been circumstantially witnesses, we have not been so much at a loss to account for the victims having always laboured under some deep impression of religion, love, or honour, or from disease, as to detect the state of their feelings, and their unhappy condition and resolutions.

8. Any part of the body which has long been the seat of pain, becomes ultimately so far disorganized, as to lose its sensibility. This phenomenon has been accounted for by the erosion, or

contraction of the nervous fibrils. It eventually arises from a totally different cause—a disease immediately impairing sensations in the arterial and medullary systems. Whatever portion of vitality is then spared, is barely sufficient to support existence; whilst it is abolished in the part in which the disease is more particularly seated. An aneurismal sac, for instance, bearing and striking upon viscera, nerves, and bones, may destroy every thing around it, without ever causing any pain. For a similar reason, deeply seated diseases have been discovered by autopsia, in the stomach, the liver, the spleen, the kidneys, the uterus, and in the urinary bladder, which had never been suspected or manifested, in any stage of an unhappy and lingering existence, owing to the absence of local pain.

9. To this law of insensibility to pain, another is to be added, which results from it. As soon as a pain, caused by any external agent, or created by sympathy, subsides in degree, or is abolished entirely, without the removal of the cause producing it, then one of two effects must take place; either the pain is to be revived, or translated to another part of the body, or an aggravation of disease will result, and affect the whole system.

10. The knowledge of this law is of the greatest importance in practice, and we will illustrate its regular results by several facts and cases, never to be forgotten.

A young woman, mother of two children, having reached the eighth month of gestation, was seized with an excruciating pain on the sinciput, which she compared to the tearing of a boring instrument into the brain. She was distracted, delirious, and, by intervals, prone to madness. Three days had elapsed, during which, a variety of remedies had been applied, without any other relief than what could be produced by stupifying opiates. Her mouth and fine teeth had been repeatedly examined, without giving any indication of the cause of her suffering; until the attending physician, still persisting in the opinion of some hidden cause, endeavoured to discover, in the light of sun-shine, which of her fine teeth might have lost its transparency. One of the lower molares was found opaque, and immediately extracted. It was sound in the prongs; but when broken under the hammer, an internal caries, and a quantity of fetid pus, were discovered. I need not add, that this *clavus hystericus* was suddenly and radically removed.

11. The cessation and translation of pain (metastasis) from one diseased part to another, is a common occurrence in many old ulcers, fistulæ, cancers, scirrhi in utero; also, during a sickly state of pregnancy, and difficult parturition.

I have seen a woman, who laboured under the characteristic symptoms of phthisis pulmonalis, during each period of her pregnancy. She was always fortunate enough to be delivered in due time, and before the purulent stage of the disease had commenced. She was thereby perfectly cured.

Another instance, more surprising, however, was that of a violent attack of pleurisy, after exposure, which so perfectly simulated labouring pains, at the eighth month of gestation, that the patient was simply left under the care of her midwife: yet, after days and nights of fruitless expectation, a physician found that she had nothing but pleurisy, with translation of pain from the chest to the uterus. This was perfectly removed by two successive bleedings. These put an end to the prominent and deceptive symptom, and did not at all interfere with the remaining month of gestation, which terminated very happily.

In a similar case, which occurred in a delicate and weakly woman, in the fifth month of her pregnancy, the pain fluctuated; appearing sometimes in the chest, at others in the uterus. One bleeding could not prevent an abortion, with profuse hæmorrhage. The pain returned to the chest with less violence, but attended with dyspnœa; and the woman shortly after died.

12. Thus, if a pain disappears from its natural seat, and is no where reproduced, we have said, that an aggravation of disease may be anticipated. Yet, a state of convulsion succeeding to the pain, is a *locum tenens*, another phenomenon which retards all danger, even that of mortification.

An old gentleman, labouring under a small inguinal hernia, unfortunately displaced his truss, in the act of leaping over a fence, and strangulation took place, with so little pain, however, that he did not perceive it. He was, however, taken very ill, with vomiting, as if the stomach was much disordered, and treated, during three or four days, for a fever of bad character. A convulsive hiccough took place, so violent as to prevent deglutition. In that alarming state, the pulse being very tremulous and intermitting, the very small strangulated hernia was discovered, in which pressure by the hand could not produce any pain. No discolouration of the skin had taken place. By the aid of a large bleeding, and by means of the taxis, it was soon reduced, and the patient set on foot next morning.

13. It is here to be observed, that acute diseases, attended with inflammation, are productive of violent and constant pain; as, for example, pneumonia, pleuritis, enteritis, nephritis, peritonitis, &c. But, eventually, they are not so fatal as other acute diseases, or fevers, of a bilious and typhoid character, autumnal, malignant, and ataxic; and in these, pains are neither continual nor frequent, but mostly vague and obscure. It may be said, that the treatment of inflammatory diseases is generally more successful, because it is better understood than that of the latter kind of diseases, as it is founded on the antiphlogistic principle of depletion. *Cæteris paribus*, it is evident, however, that malignant fevers, and typhus, which excite no pain, are more fatal and dangerous; but if in the same, it should happen that great pains in the limbs should take place, they certainly prognosticate an immediate recovery.

A girl, of a strong constitution, nearly twenty years of age, had passed through the first and second stages of the yellow fever. On the fifth day, black vomit, hæmorrhage, and jaundice, took place, and she was shortly expected to die; when she suddenly complained of great pain in her limbs. This was aggravated by the touch, which she could not bear, without crying, when it became necessary to feel her pulse at the wrist or ancle. It had happened, that her removal, as ordered by public authority, into a hospital, had been neglected; consequently, if she died where she was, the responsibility must certainly fall upon me. But trusting entirely to the last prognostic, and assured that her dreaded removal could only aggravate the disease, and prevent a happy result, I resolved to keep her; and she rapidly recovered, without delay or difficulty.

14. The appearance of a febrile disease, during the absence of a pain, or pains, which naturally ought to take place, is clearly evinced by the following case.

A gentleman, thirty years of age, of a strong and regular make, had contracted a severe tertian fever, in one of the Southern

States, where he resided. Every means had been used in vain; even the change of seasons could not break or suspend the regular accession of his tertian paroxysms, which generally were violent. He, therefore, resolved to travel to the North, to seek for a cure. He had now laboured eighteen months under the disease, and complained of a sensible decline of strength and spirits. I was struck by the contrast of his good and youthful, although pale, countenance, with his black mouth and demolished teeth, a few only of which remained sound. For this, he accounted to me, by accidentally having drank, in his youth, some poisonous fluid, which had been promptly rejected; but he assured me that he never suffered any pain from his rotten teeth, although, by close examination, I found that but few were not decayed, and that at several points his gums were in a morbid condition. Although I would not then pretend that this was the cause of his protracted intermittent, it appeared to me that the state of his mouth, evidently fetid, would interfere with the operation of medicines. I, therefore, insisted upon the extraction of as many stumps as could be conveniently removed, promising further advice. The gentleman retired, apparently surprised, and leaving me but a feeble hope of his compliance to directions. He returned, however, ten days after, announcing his perfect cure, obtained by the extraction of eleven decayed teeth and stumps, to which he had submitted, after his visit in my office. He intended to have a few more removed, if the fever returned; but after three periods, he had experienced none: and by a liberal fee, he manifested gratitude, and proved by the happy result of his case, the truth of the doctrine I have here endeavoured to develop, in various points of view, by a reference to particular cases.

15. But another inference, from the numerous instances we have detailed, may be made, of their great utility in, and extensive application to, practice, if, on examining the laws of pain in the human body, we find a regularity of sympathy, or connexion, between the organ or viscus, which, by its actual condition of disease, sends its pain to, or shares it with another part of the body.

Taking, for example, the cases of external injury on the head, whether a fracture, a depression, or a contusion, it is well known, that either of these accidental lesions will induce a greater or less morbid succession of symptoms of the stomach; as, vomiting, cramps, or pain; and as long as any such cause exists, the like effects are alternating with, and are only relieved by, symptoms of coma or torpor. This occurs even in consequence of a trifling contusion of the head, on or near the sutures, through which some nervous fibrils have affected the dura mater. I have seen the fact exemplified, in a boy nine years old, who, in consequence of a contusion, which, however, was so trifling that no operation on the part was deemed proper, until the incessant return of the above symptoms made it necessary to cut through the scalp and the pericranium, and to abrade from the surface, and on the suture, the filaments which thus had excited so much mischief and danger. But if a sympathetic affection of the stomach could be excited by so slight a cause, would we see a sufficient reason, in a case of chronic internal disease, attended with particular and severe affections of the stomach, to suppose that they proceed from cerebral congestion or distension?

16. If we direct our attention to another analogy or law of sympathy as evinced in gout, it will equally guide our minds to the source of that destroyer of all comfort in an advanced period of life. The lower extremities, in which the gout establishes its dominion, are those in which the smallest injury in the tendons or muscles, immediately excite spasms or convulsions in the upper organs of respiration, digestion and principally mastication, constituting *tetanus*, *opisthotonos*, *emprosthotonos*, or a convulsion of all the muscles surrounding the organs of digestion and respiration. This terrible kind of convulsion, it is known, terminates life by the abolition of respiration and digestion, and when commenced, it is well known, ordinary remedies can neither moderate nor suppress its progress. But if these principal organs can be sympathetically affected by the lower extremities in cases of deep injury or lesion, should we not suspect, or infer, that when they excite excruciating pains, these are consentaneous with, or to, the organs of digestion and respiration, which are all gorged, obstructed, debilitated, and, in fine, disabled by habitual abundance of food and by intemperance? As yet, no better remedy has ever been found against the gout, than perfect abstinence.

17. Again, rheumatic pain, whether acute or chronic, will offer us by analogy, a clue to its true and unquestionable source. For such is the ordinary result from injury or lesion of any limb

or part of the body, that soon after it swells, and an influx of blood or *humours* takes place in it. This is the fact in every case of tearing, of bruising, or of fracture of bones; I may add, of luxated joints. As the swelling increases, the inner capillaries become more distended; the pain, and with it inflammation, are manifested. It is a particular fact in those circumstances, and well ascertained by autopsic observation, that the inner parts of an injured limb, such as the periosteum, apaneurotic membranes and muscles, always appear as if they had been injected with red blood. The pain therefore demonstratively results from that pathological state, and to it we may attribute the phenomena of rheumatism; the more so, as this complaint is soon after accompanied with heat, swelling, and redness. Rheumatism, therefore, announces plethora in the part of the body which it affects, perhaps greater than the whole system, owing to its declivity, or to some other cause. It is now left to the decision of the practical readers of these remarks, whether rheumatism be not better treated by depleting and antiphlogistic remedies, than by any others!

18. The *tic doloureux*, *neuralgia*, a prodigiously and exquisitely painful disease, may even be adduced in confirmation of the present theory.

French physicians and surgeons have written much, and commented upon this disease more than those of any other nation. The celebrated LOUIS cured it by dividing a nerve, the inferior maxillary, or third branch of the fifth pair, passing out on the side of the chin. HEURTLOUP effected a cure also by the magnetic operation of an iron mask. MEGLIN has done more than all, by his pills of hyosciamus, valerian, and white oxyd of zinc. I could account for all these cures, although those and other French writers have left the disease involved in the same mystery it had always been in. A venerable physician, Dr. JONES, of the city of New-York, who had tried, I believe, every one of those remedies, died truly a martyr to it; having been frustrated in every attempt to remove it. From him, and in cases attentively observed, I have been satisfied, that the pain of the tic doloureux always exists on one, and the same side of the face; that the sufferer never can designate the very point from which it originates, from the eyebrows down to the chin; and that although the pain may disappear during long intervals, it is equally, and as often, renewed, or brought on, by external or moral causes, besides temperature, surprise, motion, light, and noise, and by any object which particularly strikes the senses. In the case of an old woman, the pain was twice removed and suspended for a long while, by a considerable hæmorrhage, once from the nose, and at another time from the socket of a tooth, after extraction, on the painful side of the face. The pain unexpectedly ceased, and she sunk, with the loss of her perceptions, and with asthmatic symptoms. Cabanis informs us of internal suppuration having been found in the brain of a person afflicted with the tic doloureux. From all these facts and authorities, I presume that this kind of neuralgia is a *hemiplegic affection*, and that it is in every instance to be attributed to some disease in the brain, on the side opposite to that in which it is invariably felt.

19. In conclusion, I may then recapitulate, that pain is always the effect of an organic disease, proportioned to the degree and importance of the part affected in the system; that the sensibility of our organs being different in degrees, and sometimes null, it is a preservative law of nature, that whatever evil befals any part of the human system, should be felt in another, according to the distribution of the nerves, or according to the laws of sympathy. The evolutions of pain well observed, may, therefore, lead us frequently to the discovery of the nature, and of the cause of the most obscure ailments which we are called upon to cure, or to relieve.

In addition to the practical advantages which may be derived from the theory of pain, it may not be irrelevant to consider those which may result from it, in a moral point of view. "Pain not only imparts to us useful lessons, but it contributes greatly to the strength of the constitution; it implants steadiness in the nervous system, and diffuses more energy and equilibrium to the muscular fibres: it is, however, necessary, that pain should be assisted by a proportionate degree of reaction, and that nature should always be roused from depression, with a degree of vigour: thus it is that new afflictions can increase the power of the soul, provided it does not prostrate it in despondency and despair. Misfortune not only assists us in judging, with more truth, of all things, and men, in life, but it raises and sharpens our courage, that we could always find in it, when required, a firm support against the evils of human life."[*]

ARTICLE IX.—*Case of Ecthyma Cachecticum, with observations. By* THOMAS T. HEWSON, M. D., *one of the surgeons of the Pennsylvania Hospital.*

J. H., aged twenty-three years, a sailor, was admitted into the Pennsylvania Hospital on the 7th of May, 1825. He stated, that in the month of February, while in Havanna, without his having experienced any constitutional indisposition, he was suddenly affected with an eruption on his forehead. It commenced in the form of small pustules, the summits being of a whitish colour, the bases red and inflamed. The disease successively extended to other parts of his body, affecting the trunk and the extremities; his hands, feet, and the flexures of the joints, however, remained perfectly healthy. At the period of making the record, it is stated, that in some instances, the pustules had been converted into dark brown scabs, of various extent, from one-eighth to half an inch in diameter. This was particularly observable on the forearms. Plate I, figure 1. On the breast, the pustules presented the character of concreted pus, and had not assumed the brown colour. Plate II. On his forearms, the skin surrounding the eruption, was generally inflamed, and of a dark cochineal red. On the breast, the hue was more various, affording all the shades from the light lake to the dark cochineal red. On this part of his body there was noticed a discolouration of the skin, resembling the Pityaris of WILLAN; and spots of a colour between the ash and pearl gray, were perceived more especially upon the trunk, which were supposed to be cicatrices, the seats of former scabs that had desquamated. At the period of his admission, his ancles were swelled, and we observed tumefaction and tenderness of the gums, from which there occasionally issued a little blood. His muscular strength was impaired; his appetite was good, and his alvine discharges regular; his skin was warmer than natural, and dry; his pulse 100, small, and wiery. He was put on the free use of fruit, and fresh lemon juice, and his body was regularly washed with warm water and bran.

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[*] La douleur ne donne pas seulement d'utiles leçons, elle contribue aussi plus d'une fois a fortifier tout le corps: elle imprime plus de stabilité, d'équilibre et d'aplomb aux systemes nerveux et musculaires. Mais il faut toujours pour cela qu'elle soit suivie d'une réaction proportionelle; il faut que la nature se releve avec énergie sous le coup. C'est ainsi que le malheur moral augmente la force de l'ame, quand il ne va pas jusqu'a l'abattre. Il ne se borne point a faire voir sous des points de vue plus vrais, les choses; il eleve encore et trempe le courage, dans lequel nous pouvons trouver, presque toujours, quand nous savons y recouvir, une asyle sur contre les maux de la déstinée humaine.—*Cabanis Rapports du Physique et du Moral de homme. pag.* 233.

From this treatment, on the 25th of May, there was an apparent improvement in his general health; his skin had become soft and of natural temperature; his pulse 100, and no longer wiery. He had, however, suffered more hæmorrhage from his gums, which had been restrained by a gargle of myrrh. Many of the scabs had fallen off, leaving slight depressions, at first, of a faint red colour, and which afterwards became of an ash or pearly gray, as expressed in the first report. He was now directed to take a fluid drachm of the tincture of sulphuric acid, with a pint of an infusion prepared with quassia, serpentaria and orange peel.

On the first of June, the eruption had nearly disappeared from the forehead. On the trunk, and the extremities, more of the scabs had fallen off, and the colour of the skin had considerably faded.

On the eighth of June, though the eruption was evidently disappearing rapidly, it was deemed necessary to vary the prescription, in consequence of the man's having become tympanitic. His abdomen was tumid and elastic, and afforded no fluctuation on percussion. He stated that the distension was most obvious in the morning; that he was much troubled with flatulence, and that he experienced great relief, accompanied by an evident diminution of the swelling, on the discharge of wind. His urine was natural, both in colour and quantity; his bowels open; his tongue clean; his pulse 100, and feeble. He was now directed to take the carbonate of iron and the resin of guaiacum; of each ten grains, with five grains of powdered capsicum, three times a day, instead of the acidulated bitter infusion. The ablutions with warm water and bran were continued. These means operated beneficially;

the tympanitic affection subsided; the scabs continued to fall off; and a considerable portion of the skin had resumed a healthy colour. On the 15th, however, in consequence of his bowels being very frequently disturbed, it was deemed adviseable to substitute ten grains of powdered gentian, in the place of the resin of guaiacum. In this form the medicine was continued until the 22nd, when he requested permission to leave the hospital; at which period he was reported to be nearly well.

PLATE I.

Fig. 1. Represents the eruption of the natural size, as observed on the arm.

2. Represents the upper extremity, showing what portion was not affected.

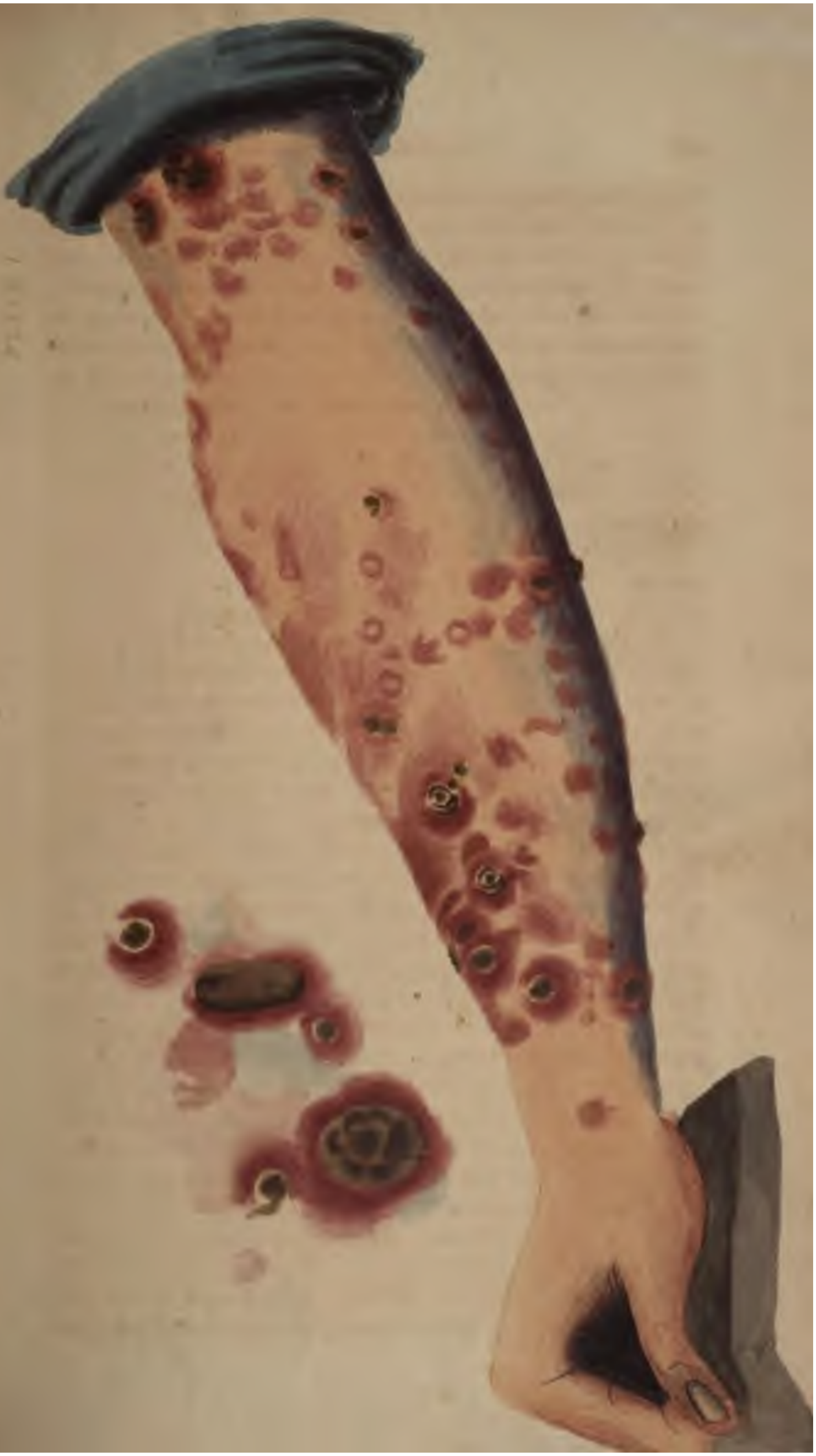
PLATE II.

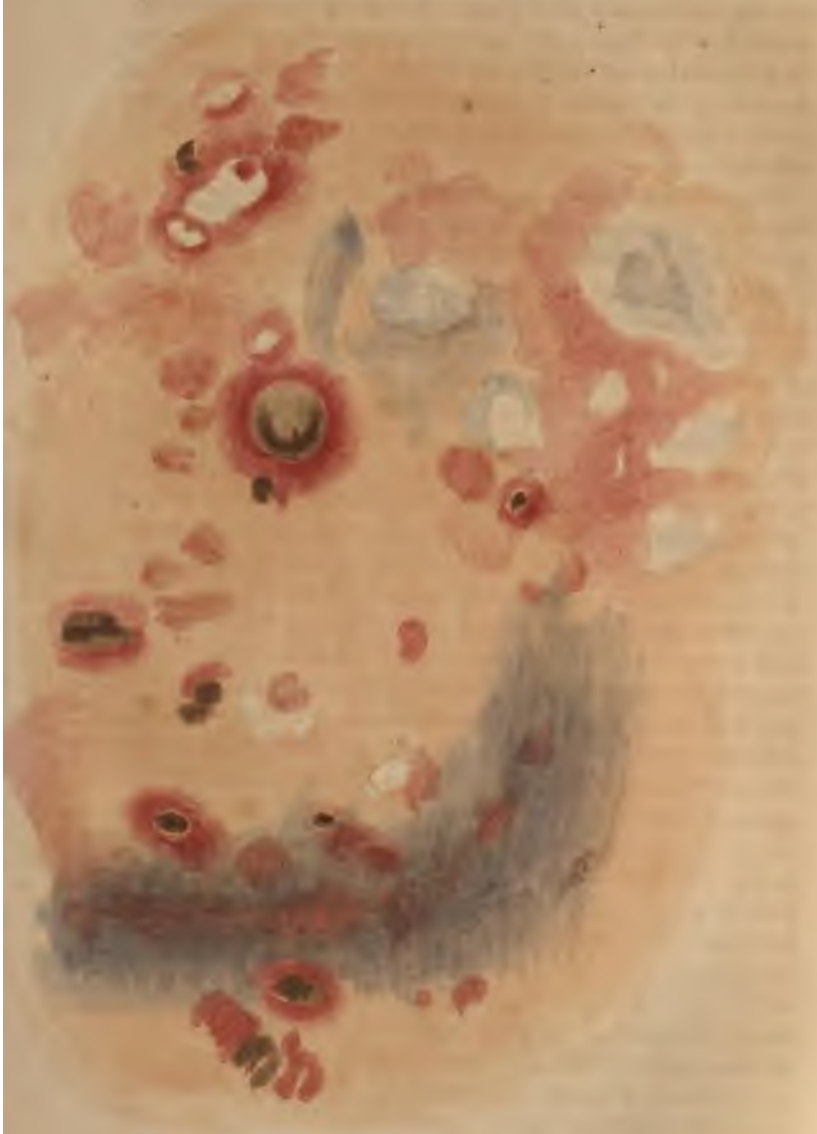
Exhibits the eruption as observed on the breast.

In offering the foregoing history, I have been actuated by the desire of drawing the attention of the profession to a class of diseases which have been too generally neglected. The skin is frequently the seat of various eruptions, that present many features capable of being faithfully delineated by the pencil, with the nicest discrimination of their distinguishing form and colour. Notwithstanding these advantages, our knowledge of these complaints is not marked by a corresponding degree of precision; and this portion of pathological science is acknowledged to be in a very imperfect state. The specific symptoms of such morbid affections have been very inadequately expressed; the nature and causes very imperfectly understood; the curative means have been, for the most, purely empirical, or directed by a blind routine; and too often, to the disgrace of the profession, the treatment has been consigned to the care of bold and ignorant pretenders.

Whoever devotes himself to the study of this very interesting portion of pathology, with a view to the successful treatment of these disorders of the skin, will experience continual embarrassment; he will find his progress in the acquisition of knowledge impeded by the great confusion introduced into the nomenclature employed to designate the numerous morbid conditions of the skin. Dissimilar terms are often applied to express the same form of disease, and frequently, complaints varying in their aspect, receive the same appellation. When information on a multiplicity of objects is to be communicated, classification and technical language will be required. Terms, to be strictly appropriate, must be the result of a minute acquaintance with every circumstance constituting the essence of the object to be described. Systematic arrangement, or classification, is the mere offspring of the intellect; has no foundation in nature, and may be considered as purely arbitrary. In the actual state of medical science, exceptions will be readily suggested, and may be reasonably urged against every system, the details of which, must, in many instances, be defective. If such objections be offered with candour, they will be entitled to respect, as calculated to impart greater precision to our views.

BATEMAN's Synopsis, originally commenced by WILLAN, who did not live to complete the work in which he had been long and assiduously engaged, is the most comprehensive treatise on cutaneous diseases hitherto published in our language; and being in extensive circulation, may be adopted as a proper standard of reference. The case I have recorded, will be readily recognised as the ecthyma cachecticum of these writers. In some features, shades of difference will be perceived, perhaps not essential, but only indicating an individual variety, and, probably, dependent on the same disordered state of the system. The pityriasis which I have noticed, has been frequently observed, in connexion with slight disturbance of the constitution; and is by no means incompatible with that condition which is found to precede and to accompany the eruption of ecthyma. The spots, of a pearl or ash gray colour, which appeared on the desquamation of the scabs, have not been described by those who have written on the pustular diseases of the skin; nor do I recollect to have observed such before. They may, therefore, be deemed purely accidental, or as marking some peculiar condition of the skin in the individual whose case has been noticed. Slight febrile symptoms are generally observed to usher in the first appearance of the eruption, and some degree of hectic or erethism accompanies the progress of the disease. Languor, depression of spirits, and prostration of the muscular powers, are ranked among the accompanying symptoms. Weakness of the digestive organs is likewise a usual attendant. In this man, the appetite is stated to have been good; yet the tympanitic affection of the bowels affords sufficient evidence, that





the function of these organs was imperfectly performed. The swelling of his ancles, and the hæmorrhage from his gums, exhibit proof of a depraved condition, approaching to scurvy. The duration of the disease corresponded with general observation, two and four months frequently elapsing before the cure can be effected.

The previous history, or a knowledge of the causes leading to the production of the disease, cannot be collected from the present case. Very particular inquiries were made; but with all their general reputation for frankness and candour, we often find sailors little entitled to confidence, in the narrative they give of their real habits, or of the places they have frequented. This defect of evidence excited in some who witnessed the case, strong suspicions of its connexion with a syphilitic taint. Against this error, it is of importance to guard; for too many persons affected with such eruptions, have been subjected to repeated and unavailing courses of mercury. That syphilis, in its secondary forms, ever assumes the character of ecthyma, has been denied by some very intelligent practitioners; and it will be readily conceded by every man of experience, that the diagnostic signs of the syphilitic forms are extremely equivocal, and that, in most instances, ecthyma can be traced to causes totally independent of such contamination. Though frequently observed in persons whose constitutions have been impaired by the previous ravages of the disease, or by the debilitating processes employed for its removal, it yet remains to be proved that the appearance of ecthyma can be essentially traced to a syphilitic origin. Should the alliance be established, we may hope, from the prevailing spirit of investigation, and from the minute attention paid to pathological distinctions, that the discriminating characters will not remain veiled in obscurity. From a careful perusal of the best writers, and from attentive observation in the treatment of ecthyma, I am inclined to believe, that in most instances, the cure will be most speedily accomplished without the use of mercury, though this mineral constitutes one of the most efficient remedies in certain defedations of the skin. Where there exists a discrepancy of opinion among those whose experience is entitled to respect, it is incumbent on us to examine scrupulously, and to weigh all the circumstances, in order to attain an accurate knowledge of the curative indications to be fulfilled.

Under the impression, that the production of ecthyma is connected with a state of cachexia, our efforts will be directed to the removal of this condition, and to the imparting of a due degree of tone and vigour to the system. To this end, on many occasions, a regulated diet, consisting of such articles as afford a nutriment bland and easy of digestion, will prove sufficient. At the same time, attention should be paid to personal cleanliness, in the use of the tepid bath; or this purpose may be conveniently accomplished by frequent ablutions with warm water and bran. With the same intention, we find various farinaceous decoctions, and water impregnated with vegetable mucilage, as obtained by boiling the bark of the slippery elm, highly recommended. These topical means facilitate the desquamation of the scabs, and by softening and cleaning the cuticle, assist in restoring the skin to a sound and healthy condition.

When the strength has been more deeply impaired, benefit will be derived from the administration of the vegetable tonics; as, the decoction of cinchona, serpentaria, sarsaparilla, &c., either simple, or in the more compounded preparations. To these, the mineral acids are often advantageously added. I have lately visited a patient, affected with the disease, after a severe attack of typhus. The man's face was greatly disfigured, and he was rendered a most loathsome and disgusting object. In this case, yest, exhibited to the extent of a pint and a half daily, has afforded the most positive relief, acting as a grateful cordial; while the mildest officinal bitters, and the conserve of roses, excited intolerable distress, in consequence of the extreme tenderness of his mouth and throat.

In persons labouring under constitutional irritation, the decoction of sarsaparilla, in combination with antimonials, has proved eminently serviceable. But on many occasions, our chief reliance must be placed in the free exhibition of opium, cicuta, stramonium, or other narcotics.

In the more protracted forms of ecthyma, change of air and gentle exercise will contribute essentially in strengthening the system, and in shortening the disease.

ANALYTICAL REVIEWS.

ARTICLE X.—*A Treatise on the Physical and Medical Treatment of Children. By* WILLIAM P. DEWEES, M. D. *8vo. pp.* 490. *Carey & Lea. Philadelphia.*

THE people of this country have often been reproached with being the too servile imitators of their English brethren, in matters of taste, of arts, and of sciences; and we must confess, that in respect to our literature, the reproach is not wholly unfounded. Were we anxious to investigate the causes of this fact, we trust that many might readily be discovered; it will be sufficient for our present purposes, however, to point out the sameness of language in these States and Great Britain, as of itself capable of exercising a powerful influence in retarding our emancipation from the fetters of English literary despotism. Books are so easily procured from the United Kingdoms—republication of them is so much preferred by booksellers, to encouraging Americans, who are willing to aspire to the honour of authorship, that the efforts of American genius have but too often lain dormant for want of proper stimulus. In respect to our profession, the baneful effects of this system of republication is particularly evinced; and, until within a few years, the appearance of a medical work, strictly American, was a thing not often seen. The numerous medical periodicals have served admirably to correct, in some measure, this effect; affording, as they do, an opportunity to the members of the profession to publish their thoughts, and the results of their experience.

Medical *works* now make their appearance much oftener than formerly; for genius and talent are finally triumphant, however thick and obscure the clouds by which they are surrounded; and we cannot help thinking, that every true American will view with pleasure and pride the moment, which is fast approaching, when we shall be able to repel the charge to which we have alluded above, and assume a dignified rank among the literary nations of the world.

It will be confessed by every one who has kept pace with the improvement of medical science in this country, that the author of the work of which we intend now giving an analysis, has contributed, in no small degree, to promote the rising reputation of our medical literature. His essays on difficult labour, and on different subjects connected with midwifery, and more particularly his excellent system of midwifery, have already gained him so high a name, at home and abroad, that few now need be told of the claims he has to our particular regard. It would be no easy task, to find a physician better qualified to undertake a work on the physical education and diseases of children, than Dr. DEWEES, whose long and extensive practice has enabled him to see a great deal, and whose natural and improved judgment has enabled him to see *well.* But as our readers must already be impatient to know what so judicious an author has said on so interesting a subject, we proceed, without further comment, to lay before them an abstract of his opinions, and of the result of his experience.

Entertaining the opinion that the physical treatment of children should begin, as far as practicable, with the earliest formation of the embryo, Dr. DEWEES thinks it involves the conduct of the mother, even before her marriage, as well as during the period of pregnancy; for, although he does not say, as many have done, that every man is neither more nor less than what his mother made him; nor that to her alone he must refer the vigour or feebleness of his constitution; yet he is disposed to think, that much, in both respects, depends on her. To ensure the first of these objects, and to prevent the other, it is evident the woman herself must possess health; and it should be her principal object, by every proper means, to preserve it. Every one must coincide in opinion with the author, that the stamina of the offspring depends almost exclusively upon the good health of the parents, and that, upon the original healthy dispositions of the child, will much depend the success of a well directed physical education; and that upon *the judicious application* of physical *agents* healthy development takes place, and on their neglect, or misapplication, the soundest stamina may be converted into debility tending to disease. Hence arises the importance of a good conduct on the part of the mother, both before and after marriage, and especially during pregnancy, for the formation of healthy stamina.

Leaving the consideration of the prefatory remarks, we proceed to offer a notice of the contents of the work; the first chapter of which is devoted to the subject of *marriage.* It is divided into several sections, of each of which we shall now present an abstract. In the first section, on the period of life at which the woman should marry, our intelligent and experienced author remarks, that as the development of the body is successive, and requires a certain period for its completion, and as certain functions cannot be performed in the best manner until the organs destined to perform them have acquired their full development; and again, as when any function is prematurely urged, it leads to the imperfection of the product dependant on that function, as well as entails upon the part so exercised, debility and premature decay; it follows as a natural consequence, that too early marriage is never to be advocated; since it will not only materially influence the health and well-being of the offspring, but be productive of ill consequences to the mother herself.

In respect to the period most proper for marriage, it is difficult to lay down any definite rule. The original stamina, physical and moral education, climate, mode of life, &c. will have considerable influence in that respect. But in this climate, Dr. DEWEES thinks, the period may be fixed with much certainty at between the twenty-third and twenty-fifth years for the male, and from the nineteenth to the twenty-first years, for the female. In regard to the circumstance, that females in this country lose their beauty earlier than those of Europe, and particularly of Great Britain, our author is of opinion, that the cause of this hasty decay must be principally sought for in their very early and premature marriages; but at the same time confesses that climate has also a limited agency. "The examples," he continues, "of evils resulting from precocious unions in this country, are familiar to every body; they are not limited to the diminished vigour, and shortened life, of the male; nor to the faded beauty, the blasted health, and the premature old age of the female; for they are extended to their unhappy offspring, on whom they have, perhaps, entailed a diminished stature, debility of body, and imbecility of mind; or have handed down to them, strong predisposition to consumption, rickets, scrofula," &c.—p. 11. Better constitutions are perpetuated to offspring by men advanced in life, where the physical powers have been well preserved by moderate and proper use, than by young men who have been prodigal of them; but Dr. Dewees is not an advocate for the union of old age and blooming youth.

To *constitution*, which forms the subject of the second section, much attention should be paid; and it ought invariably to be a consideration in marriage contracts, that both parties should enjoy sound health and constitution; for although children of people of slender frame and health, may be healthy in appearance, such appearances are often deceptive. Children, under such circumstances, continue to thrive for a time, but rarely attain an age much beyond manhood, and agreeably to Dr. D.'s experience, old age is out of the question.

Section 3. *Predisposition to Diseases.* Whatever may be the diversity of sentiments in respect to the hereditary property of certain diseases, we believe there can be but one opinion as regards the fact that predispositions are often transmitted to children by their parents. Nor is it less a fact, that "those who inherit such predispositions, may, for many years, enjoy good health, and may not be led to suspect any cause to be lurking in their systems, which, when called into action, shall but too soon destroy such flattering expectations." Bearing this fact in view, we cannot but join with our author in opinion, that it becomes a point of duty in parents to investigate the tendency to hereditary complaints, before they connect their children with those who can give but a temporary security against the most painful, afflicting, irremediable, or suddenly fatal diseases.

Section 4. *Of the immediate state of health.* By this the author means that condition of the system in which either of the diseases known to be transmissible from the parent to the child is absolutely developed. Although it would, at first-sight, appear most reasonable, that unions under such circumstances would not take place, yet it but too often happens that this fore-knowledge is entirely disregarded by those individuals most concerned. This may arise from several causes: 1st, A want of proper feeling for the consequences of such diseases when extended to offspring—2nd, a hope of an escape from their consequences—3d, an ignorance of their nature and of the risk of their propagation—4th, a disgraceful selfishness where fortune or beauty is concerned.

Dr. DEWEES next offers some observations on the conduct of the mother during pregnancy. This is a subject of great importance to the welfare of the offspring, and consequently deserves considerable attention. Dr. D. remarks, that a little reflection on the delicate and uncertain attachment of the ovum to the uterus in the early months of pregnancy, and on the facility with which this union may be destroyed, must make us cease wondering that abortion should be so frequent, and that at the same time, we are taught to acknowledge the care required for its prevention. It too frequently happens, however, that women pay no attention to these circumstances until warned by frequent abortions, and by a change in, or a loss of, their wonted health. To prevent abortions, therefore, as well as its many consequences,

"The pregnant woman must carefully avoid, 1st, All such motion as shall unduly exercise her muscles; as too long walks, especially in such weather as will endanger her falling, or shall over-heat her, as dancing in very hot weather; hastily running up stairs; lifting heavy weights, &c.; 2nd, All such as shall take her mind by surprise, if we may so term it, as unpleasant or dangerous sights; 3d, All such as shall inordinately hurry her circulation, as heated rooms, or stimulating liquors, &c.; 4th, All such as shall embarrass the intestinal canal, or too severely tax the powers of the stomach; as flatulent vegetables, too great a quantity even of proper food, or any quantity taken at improper seasons, as late suppers, &c.; 5th, All such as shall give too frequent motions of the bowels, as brisk or drastic purgatives; or such as still too much retard their motion, as the unnecessary use of laudanum, or the unnatural use of chalk, or disobeying the proper calls of nature; 6th, All such as shall make too severe and partial a pressure upon the chest and abdomen, as tight lacing, &c.; 7th, All such as shall increase the irritability of the system; as the immoderate use of strong tea, coffee, opium or other narcotics; and the too long indulgence of repose in warm feather beds; 8th, All such as shall too exclusively occupy the mind; as severe study, night watching, &c. &c."—p. 18, 19.

But it is not only incumbent on the mother to guard against abortion, since it is well known that the proper incubation and nutrition of the fœtus, may, by the improper or heedless conduct of the mother, be impaired, and the offspring materially injured, although he may not be destroyed.

One of the vulgar errors which have done much injury, and to which Dr. D. calls attention, is, that the pregnancy is constantly accompanied by a plethoric condition of the bloodvessels, and that there is a returning necessity for blood letting. Dr. Dewees very properly remarks, that this state of fulness does not always exist, and when it does, it by no means follows that it should always be subdued by bleeding.

"We are warranted by long experience to declare that unless this plethora produces some direct evidence of its mischievous tendencies, as headach, pain in the chest, a sense of fulness in the head upon stooping, giddiness, &c. the patient should not have recourse to bleeding without the express approbation of the physician. And perhaps it would be erring on the safe side to say, that even when the symptoms just enumerated are present, his advice had always better be asked.'—p. 20.

It must not be inferred, however, that bleeding is always improper; it is only against its *abuse* that these remarks apply.

Another vulgar error, no less important to be corrected, is that of indulging the wayward or voracious appetite, merely because the woman is pregnant, and because, according to common parlance, she has a child within her to support. So far from this being correct, experience teaches, that the woman has no absolute necessity for taking more food than under any other circumstances. This, Dr. Dewees proves, by calculating the weight of the fœtus and secundines, and the number of days they remain in the uterus; by which it follows, that the daily increase is not more than three-fourths of an ounce. He thinks, on the contrary, that the nausea and vomiting which the woman suffers, indicate that less food is necessary. Although he does not attempt to explain the whimsical demands, or "longings," for certain substances, which the pregnant woman suffers, our author offers some observations on them, accompanied with very remarkable cases. It results from his observations, that, although these substances may indeed, and do, occasion sickness at stomach, a temporary loss of appetite, and sometimes vomiting, no other evil has ever resulted from gratifying the woman in her inexplicable desires.

"Nor do we believe," he continues, "in the influence of the 'imagination' upon either the form, colour, or future destiny of the child, however powerfully this faculty may have been exerted during gestation." This is the result of long experience and mature reflection.

In chapter 4th, *on the indulgence and exercise of temper, &c.*

our author remarks, that, besides the prohibitions already suggested, there remains to be considered, the injurious tendency an indulgence in unbridled passions has upon the immediate, as well as the future welfare of the fœtus. "Nothing contributes more certainly," he justly remarks, "to the safety and future good health of the child, than cheerfulness of mind, or, at least, equanimity, on the part of the mother:—this fact was well known to the ancients, and they accordingly acted upon it, by giving great attention to the little wants of the pregnant woman; removing from her all disagreeable and disgusting objects; and constantly presenting her with subjects calculated to excite admiration, or to create agreeable impressions on the mind."—p. 33.

Chapter V. *Of the food proper for pregnant women.* Under this head, the author treats of the highly injurious effects of an indulgence in stimulating drinks. The habit of taking a too large quantity of these substances, is sometimes contracted during pregnancy, from a desire to overcome the unpleasant sensation of nausea and debility, commonly present at this period, by using some cordial or tincture of high character, for this purpose. But experience proves, that no gratification is so dangerous as this. Agreeably to our author, and, we trust, to every one else, this practice should be resisted, from the moment it begins to be importunate; and a deaf ear should be turned to the dangerous maxim, that, if wanted, these substances cannot hurt. "Every thing which can unduly stimulate the system at this time, is highly injurious, by putting both the nervous and vascular systems in an unnatural condition; consequently, the functions so important to the welfare of the fœtus, are interfered with, or imperfectly performed—and hence, the children of women who over stimulate, or become intoxicated, are always less healthy and less vigorous, than those of mothers who observe a contrary conduct."—p. 35.

Dr. Dewees next lays down certain rules for the conduct of the woman at the period of labour. Of these, however, we can offer only an abstract. 1st, Let the woman seek the best possible aid, for this anxious moment, which the circumstances will permit, both as regards her physician and her nurse. 2nd, Let her not be impelled, by false theories or by bad counsel, to use *too much* exercise, towards the latter period of pregnancy. 3d, When warned by the usual symptoms of the approach of labour, let her not indulge in gloomy forebodings, nor yield to unreasonable fears for the event. But let her console herself with the reflection, that when directed by a judicious practitioner, death, or even an untoward circumstance, rarely attend labour. 4th, When labour has actually commenced, let her not yield to an overweening anxiety to hasten its progress, by taking improper articles of diet or drink, and walking repeatedly in her room. 5th, As the efforts of labour, however successfully or quickly exerted, must necessarily tend to hurry and disturb the circulation, and thus dispose to fever, every thing that can possibly increase the impetus of the blood, must be carefully avoided, as stimulating drinks or food, &c. 6th, Let not too much anxiety be indulged for the event, nor too much apprehension be entertained, because the period of trial is of longer continuance than she anticipated. 7th, Let not the woman indulge in any opinion that may clash with those of her attendant, but yield herself entirely to his direction. 8th, Let her guard against her passions—childish waywardness or fretfulness—lest her nervous system be thrown out of balance, and hysterical convulsions ensue. 9th, After delivery, let her yield implicit obedience to the directions of her medical attendant.

As the future health and welfare of the child, after birth, depends in the greatest measure on the healthfulness of the mother, and her capacity to supply it with sufficient and proper nourishment, the utmost care is demanded, and attention should be paid to the following rules. 10th, She should avoid all such causes as may tend to produce or augment fever. 11th, She must aid, by her own good sense, the endeavours of her physician, to prevent the accession of fever, by not permitting the nurse, as is too often done, to run counter to his directions. 12th, With a view to give the best possible chance for the breasts to perform their functions properly, and to prevent, as much as possible, the occurrence of sore nipples, she should have the child applied to them so soon as she is sufficiently recovered from her fatigues to permit it; and repeat this, if possible, every four or five hours. 13th, *She must not delegate to any other being, the sacred and delightful task of suckling her child, unless there be the most decided and insurmountable impropriety in continuing it at her own breast.* 14th, She should attend to the dressing and undressing of her infant, if she cannot perform these offices herself. 15th, The mother should not permit her child to be fed while she herself can supply it with sufficient nourishment; and avoid all food which is known to be injurious.

The succeeding chapter contains "observations enforcing the foregoing rules; for which, want of sufficient room forces us to refer to the volume itself.

As Dr. Dewees thinks that the sound condition of the nipples is of the first consequence to the mother and child; and as it materially influences the future health of the latter, he devotes a few pages to the consideration of their treatment when sore. This affection almost always arises from over distension, and consequent inflammation of the milk vessels, or from obliteration of their little extremities by compression or other injury. The friction which the nipples suffer, from the attempt to draw off the milk, renders them tender, and soon causes a removal of their covering membranes. Agreeably to this view of the subject, the treatment should consist in avoiding distension and inflammation of the milk vessels, and removing the obstructions of their extremities. Dr. Dewees recommends that the woman should begin to prepare these parts some time previous to labour, by the application of a young, but sufficiently strong, puppy to the breasts, immediately after the seventh month of pregnancy. As regards the different washes recommended for the purpose of hardening the nipples, they rarely succeed, for the simple reason, that it is not so much an unusual tenderness of the skin that gives rise to the complaint, as the degree of force necessary to extract the milk when these parts are over distended or inflamed.

In respect to the necessity of the mother's suckling her child, Dr. Dewees proves, we think satisfactorily, that she is compelled by *duty* to perform that task. It ought, also, to be regarded as a *pleasure*, which the fond mother unhesitatingly declares surpasses all others. Nor is this the only point of view in which this should be held; since experience teaches, that many diseases may accrue to the mother, from neglecting to perform this sacred duty. To the child, many injuries, both to his physical and moral system, may arise, by placing it into the hands of hired nurses. The first of these may occur from a deficiency of milk, the consequences of which are sufficiently known to the practitioner.

In reference to the results of a bad milk, the author remarks,

" When this happens, we find the child rejecting the milk soon after it is received; or it passes with rapidity and pain through the bowels. If the diapers be examined, the evacuations will be found copious and watery; offensive in smell; of a light green colour, and mixed with a portion of undigested milk curd. These discharges may not be very frequent, yet so large, as rapidly to weaken the child; a proof, that but a small proportion of the milk received had been converted into nourishment. The child becomes uneasy, fretful, and very frequently disturbed in its sleep; it suddenly cries, as if in violent pain, and again falls into unrefreshing slumbers. It becomes pale; its flesh is flabby; and after a short continuance in this state, emaciates suddenly, and becomes alarmingly ill with diseased bowels, or disordered head."—p. 56.

The child suffers often from a want of due care to its various necessities. The cares essential to its comfort, consist in the proper and regular application of the child to the breast, that it need not suffer from hunger, or be injured by too long abstinence; in the proper and due attention to cleanliness; and in the establishment of regular and useful habits, as regards its exercise, exposure, sleep, and evacuations. The proper discharge of these essential points, requires more affection for the child than is commonly found in a wet nurse.

The physical injuries which the child may suffer from the selfishness of its nurse, are very numerous, and have been peculiarly well pourtrayed by our author. We cannot, however, notice them here in detail, and beg leave to refer to the volume itself, all who are anxious to be well acquainted with them. Dr. Dewees has particularly dwelt on the practice common among these women, of administering clandestinely laudanum to the infant; and has detailed a case in which it was applied to the nipple. A nurse may, and sometimes does, propagate an active or occult disease to the suckling child; as, itch, tetter, and, in two instances which fell under our author's immediate care, the most loathsome disease was communicated, not only to the children at the breast, but to four others.

The next subject which engages the attention of Dr. Dewees, is the washing, dressing, and undressing of the child. He lays some stress, in contradiction to the opinion of some authors, on the necessity of removing the unctuous matter adhering to the skin of the child, at the moment of birth. The following reasons are given:

> "1st, When this substance has not been cleansed from the body, either from careless washing, or from the difficulty found in its removal, it has always produced a disagreeable smell. 2nd, When it has been suffered to remain from any cause, it has hardened itself so much, as to give pain from its mechanical irritation. 3d, When it has been suffered to dry, it has remained in some instances so long, as to leave the surface under it so severely excoriated, as to require particular attention for some days."—p. 62.

In removing it, cold water and rosin soap should be carefully avoided, and lukewarm water and fine soap had recourse to.

> "The dress of the child should always be made subservient to comfort. If this rule be acted upon, it will be found to consist, 1st, in such arrangements of it, as shall sufficiently protect it against cold; and, 2nd, to ensure it against all inconvenient and injurious pressure and restraint, as well as producing too much heat; therefore, the cruel practice of swaddling should be forever laid aside."—p. 65.

The clothes should be so adjusted, as to leave sufficient room for the exercise of the child's limbs.

In cold weather, the arms may be covered, to encourage warmth; but they should never be fixed down. Nor should there be more clothing heaped upon the child than shall be necessary to protect it against the existing cold. In winter, or even in cool weather, flannel is absolutely necessary to form part of the child's dress, especially their shirts and petticoats. As far as practicable, the flannel should be fine and white. The principal advantage in the use of this substance, is, its non-conducting property of sensible heat, which renders it well calculated to protect the body against the too rapid escape of this important fluid. As a general rule, the younger the child is, the more of this article may be required; provided, however, it be not applied in "such a quantity as to create a vapour bath."

Flannel may be improper, 1st, Where it excites too much perspiration, as it sometimes does in young children, during the extreme heats of summer. 2nd, Where there exists any idiosyncracy. 3d, Where there is a febrile condition of the system. Dr. Dewees further recommends frictions upon the abdomen of the child with the bare warm hand, for a minute or two every time the child is dressed, for the purpose of promoting the healthy action of its bowels.

When the child has arrived at the age of eight or nine months, the clothes should be shortened, so as to leave the feet and ancles free; by which it will be enabled to use its little muscles with greater facility. In order to prevent it from catching cold, stockings and soft shoes should be used; and to guard against the same effect, the child should be dried as quickly as possible after it may have become wet, by a speedy renewal of the diaper. Too many pins should not be used in dressing the child, and the most scrupulous attention must be paid to avoid making use of *needles* instead of pins.

The next subject to which attention should be called, is, "The feeding of the child in the month." (Chapter 14.) On this point, Dr. Dewees makes the following remarks:

> "We have assumed as principles, and, as we think, upon broad and well established data—1st, That the woman is the proper and only source, from whence a child, until a certain period, should derive its nourishment; 2nd, that every woman, cæteris paribus, is able to furnish it; 3d, that no other nourishment is so entirely proper, as the milk of a healthy woman."—p. 81.

When, however, owing to some peculiar circumstances, it is necessary to give the child something to sustain it, no other article should be selected but cow's milk, diluted with one-third of water, and sweetened with a little loaf sugar. In the administration of this substance, the following rules should be attended to:

> "1st, The milk should be pure; that is, not skimmed, nor previously reduced by water; and should be used as quickly as possible, especially in warm weather, after it has been drawn from the cow. 2nd, When practicable, it should always be taken from the same cow. 3d, The milk should be given as soon as possible after its mixture with the water and sugar, lest it should be disposed to ferment before it is exhibited. 4th, It should never be mixed before wanted, and no more should be mixed than the child will take in a short time; for it is much better to prepare fresh, than to run the risk of its becoming sour before it is used. 5th, The milk should never be heated by the fire; it should always be done by adding the water hot, that is intended for its reduction; or by a sand bath; this will give it a sufficient temperature, without incurring the liability to be overheated by being placed on the fire. 6th, In weather that is unfavourable for keeping milk, it

should be placed in the coolest place that can be commanded, or kept in often renewed cold water. 7th, Should the slightest tendency to acidity be observed in the milk, it should be rejected without hesitation; nor should an attempt be made at its supposed restoration, by using an additional quantity of sugar, as this will eventually but increase the evil."—p. 83, 84.

Care should be taken that no more be given to the child than is absolutely necessary for its sustenance.

In regard to "the observances towards the mother during the month," &c. (Chapter 15.) and to "the duties of the mother after the month," &c. (Chapter 16.) we refer to the volume itself; as we find it impossible to present a satisfactory abstract of all the excellent directions given in these chapters. We shall, however, offer the following general rules, as given by our author himself, in the succeeding chapter.

"50, The woman should take exercise in open air, as soon as this is rendered safe, by the state of her health, the period after confinement, and the state of the weather. 51, She should never subject herself to partial exposure, under the hope of 'hardening herself.' 52, The re-application of the diaper after it has been dried simply, should be prohibited, as several evils arise from that practice. 53, The mother may indulge in such diet as her experience has proved to be innocent; for it will seldom or never disagree with the child, when it perfectly suits the mother. 54, When the mother experiences any inconvenience from the use of any substance or substances, she should not hesitate a moment to abandon them; for if they disagree with her, they will be sure to do so with the child. 55, Should there be a failure in the quantity of the milk, the mother must not attempt to increase it by highly seasoned food, and stimulating drinks. 56, She may, however, use, with great advantage sometimes, the nutritious substances recommended in the text."—p. 99, 100.

These substances are milk and water, milk alone, malt tea, molasses posset, or porter or ale posset.

Dr. Dewees's remarks on the nursery are exceedingly valuable, and should be read in full by every practitioner and every parent. We regret that our limits will not permit us to enter upon this subject.

In Part II, "Of the physical treatment of new-born children," Dr. D. expresses the opinion, that *crying* should be looked upon as an exercise of much importance, both to the immediate and mediate advantage of the being. It is immediately useful, as it facilitates the passage of blood through the lungs, and contributes more effectually to the expansion of the air cells of the lungs, thereby presenting a larger surface for the action of the atmosphere. The mediate advantages of crying consist in its giving strength and tonicity to these organs, and freeing them from the mucus constantly pouring into their cells.

Dr. Dewees recommends that the child should be accustomed to sleep in rooms that are not purposely kept extremely silent; as by this means a morbid sensibility of the organs of hearing is not generated, and, consequently, the child will be exempt from all the evils and inconveniences this condition naturally inflicts.

In reference to the air which the child should breathe, our author remarks, that during the summer our cities become unfriendly to our very young population; and much benefit is derived by taking them to the country, when health has failed in the city. But this favourable change, he thinks, is not owing altogether to the purity of the air: much depending on removing children from the remote causes which produced the disease. "We are, also, certain, that the country air is not made the best possible use of, by those who inhabit cities; for no sooner does the warm weather commence, than they leave the city, and this when the children are in perfect health. In consequence of this, they become accustomed to the air of the country, as well as liable to any epidemic or local influence that may exist there. The object of leaving the city is now defeated, since it cannot preserve health to those who fly from it for refuge."

> "We are persuaded, those who profit most by the change of air, are those who repair to it as a remedy—children who have suffered, or are about to suffer from the heat of our cities, derive immediate, as well as permanent advantage from the change—but when taken to the country early in the season, they appear to us to be as liable, or nearly as liable to disease, as if they had remained in the city."—p. 123.

Dr. Dewees condemns, and we believe with great reason, the habit many have, of keeping the child at their bosom all night, with its head closely covered with the bed-clothes; on account ot the injurious effects arising from the want of renewed air, for the purposes of respiration, and the carbonic acid gas, and insensible and sensible perspiration emanating from the surface of the woman's body.

Of temperature it is remarked, that children of tender age should never be suddenly subjected to great changes of temperature, whether the change be from a high to a low one, or the reverse. When a child is exposed to a cold atmosphere, the danger does not arise so much from the immediate effects of cold air upon the lungs, as from the subsequent action of the warm air upon them, and in which they must sooner or later be placed. Violent re-action soon follows that state of torpor which the cold air imposed upon the lungs, and inflammation will almost certainly be the result. The sudden attempt to "harden a child," as it is called, in cold weather, is only another determination to see how much a child can bear, without dying under the experiment. It should, therefore, be guarded against.

The practice common among many parents, of exposing the arms of the child to cold, should be condemned. Mr. PORTAL has shown the great connexion existing between the upper extremities and the lungs, by means of the cellular tissue of these parts. Whatever, therefore, does injury to the upper parts of the arms, or arm pits, will be felt by the lungs. Hence the injury arising from exposure of these parts to cold. Dr. DEWEES is a strong advocate for a moderate exposure of children to cold air, and prefers allowing them fresh air in the house, to sending them at all seasons and at all temperature, in the open air. The degree of temperature to which the child is to be exposed, must be proportionate to the strength of his constitution; and as this varies in each individual, so must the degree of exposure. The other extreme, however, that of varying it too much, and accustoming them to too warm a medium, is alike injurious and should be carefully avoided.

In the chapter on "Food," Dr. DEWEES presents an outline of the causes which may render it improper for the mother to nurse. The 1st is, where there is no provision made for the nourishment of the child; or where this is not in sufficient quantity, owing either to a natural or accidental derangement of the breasts, or the imperfect performance of their duty. 2nd, Where the supply may be sufficiently abundant in the commencement, but where it habitually fails in a short period after, owing to some constitutional defect, which is perhaps neither evident nor remediable. 3d, Where, upon former occasions, it was unquestionably found to disagree with the child. 4th, Where there is a strong venereal or scrofulous taint in the constitution of the mother. 5th, Where suckling produces an active or painful disease in the mother, as cough, colic, &c. 6th, Where the mother is so situated as she cannot avoid provocation, grief, or sorrow; or possess an irascible and bilious temperament; or is subject to great nervous debility, accompanied by great susceptibility to every stimulus. Wherever, also, parents labour under chronic diseases, the predispositions of which are likely to be transmitted to their offsprings, it is proper that these latter should abstain from the breast of such parents, and be provided with other means of support.

In respect to the management of the meconium, experience shows, and nature points out that it should be evacuated as early as circumstances will permit; for she has provided for this important end, by means of a substance called colostrum, found in the mother's breasts, upon the first application of the child to them. In order to derive the desired effect, however, the child must be placed early to the breast; for if this be neglected until the secretion of milk is completely established, it becomes too diluted to serve this important end; and artificial purging must be had recourse to. Drastic purges must, however, be carefully avoided, as they are often productive of great injury to the infant. In general, a little molasses and water, or a little sweet oil, will answer the purpose. It is necessary that the physician should examine the evacuations; for so soon as they cease to be tenacious, and of a dark-green colour, the bowels have been sufficiently evacuated, and the medicine must be discontinued.

Our author is firmly persuaded that the following are the principal means, by which the immense mortality among children may be diminished.

"1st, Let none but a mother, when she herself is able, have the immediate charge of her child; for she alone should supply it with food; it is she alone should supply it with medicine. 2nd, Let every mother make herself well acquainted with the best opinions upon the physical management of children; but never let her aspire to their medical treatment, except from dire necessity. 3d, *Let no mother* *trust another to count out doses of laudanum, while she herself retains the faculty to do so, unless the person thus chosen has as deep, or nearly as deep, an interest in the child, as the mother herself.* 4th, In case of indisposition, let the mother confide in no judgment for her child's disease, but that of her physician, if his advice can be commanded; and above all, let not his prescription be interfered with by the obtrusive advice of a nurse, or still more ignorant old woman. 5th, Let a mother place no undue confidence in the prescriptions of a nurse, under the persuasion that her *experience* must be valuable, when the advice of an experienced physician can be obtained." p. 150.

When there is such a reduction of the mother's milk, that it will but imperfectly nourish the child, the deficiency may be obviated by giving the infant the mixture of cow's milk, water and sugar, before mentioned. This may be administered in one or two ways; by the spoon, or by the bottle. We should, however, never recommend the first, if the second can be enforced. The child must not be confined, however, to this simple diet until the period of weaning. After the fifth month, and in cool weather, the addition of barley, gum arabic, or rice water, or a small quantity of arrowroot, may be permitted. After the appearance of the teeth, some of the farinaceous substance may be added, and after their completion, and even a little earlier, animal substances may be allowed, with perfect propriety.

An error is very commonly committed in the early exhibition of animal food; it is imagined that all kinds are equally proper, and this either salted or fresh. Experience proves that beef, mutton, fowl, are much to be preferred to veal, lamb or pork. Oysters are very unexceptionable articles of diet. The most proper mode of exhibiting these substances is in the form of tea or thin soup, without the admixture of vegetable matter. "Occasionally," our author continues, "we have known the stomach reject those animal solutions. In such cases, where the change of diet is desirable, we have found the substance itself, when divested entirely of its fat, answer very well; it should, however, always be chopped up very fine, and given in very small quantities at a time."—p. 160.

There are cases in which the mother is obliged to use artificial means entirely. In these, recourse must be hadto the sucking-bottle, which must be regarded as a great improvement in the rearing of children. In such instances in which the bottle cannot be used, (which but seldom happen) a wet nurse must be provided. For the purpose of keeping the bottle sweet, the following rules must be observed.

"1st, Never put a second supply of milk, or food, upon the remains of a former, unless a very short interval has elapsed, and they are of the same kind. 2nd, So soon as the child has taken as much as it chooses, or as may be judged proper for it, let the bottle be emptied, if any food remain, and immediately cleansed by hot water. 3d, When well cleansed by hot water, let it be thrown into, and kept in, a basin of cold water, in which there is a little soda dissolved. 4th, Before using it, let it be well rinsed with clean cold water. 5th, Let the extremity from which the child is to suck be covered with a heifer's teat, in preference to any thing else." And,—with a view to its preservation, the following rules must be observed.

"1st, Let this teat be one that has been preserved in the best possible manner, by those who understand this art. 2nd, Let not the teat be of too large a size; nor one that will permit too rapid a flow of the food, especially for a very young child. If it be found to pass too freely, let the piece of sponge which is, or always should be, at its extremity, be either enlarged or more strongly compressed. 3d, Immediately after the bottle has been used, remove the teat from its mouth; and let it, and the sponge, be well washed, and kept until again wanted, in a little whiskey and water. When re-applied, let it be attached by a piece of clean thread, as the former piece will be sour. From what we have said, it will appear that we prefer the flat oblong bottle, with a teat, to the bottle and tube—and we do this for the following reasons: 1st, The extremity of the tube is never so well received by the child, as the teat; nor is it so comfortable to its mouth. 2nd, The tube frequently becomes obstructed by the curd of the milk; and it is oftentimes difficult to remove it; and if not removed, its objects will be defeated. 3d, It is much less convenient; requiring much more address in the management of it, than the bottle. 4th, It is much more difficult to keep clean, or sweet; consequently, must be improper in proportion to that difficulty."—p. 164.

Whenever it becomes necessary to make use of a wet nurse, the greatest care should be taken to select a proper one. St. Marthe, in his Pædotrophia, as translated by Dr. Tytler, gives the following directions by which we are to be regulated in our selection.

"Choose one of middle age, nor old nor young,
Nor plump, nor slim her make, but firm and strong;

Upon her cheek, let health refulgent glow,
In vivid colours, that good-humour show.
Long be her arms, and broad her ample chest,
Her neck be finely turned, and full her breast;
Let the twin hills be white as mountain snow,
Their swelling veins, with circling juices flow;
Each in a well projecting nipple end,
And milk in copious streams from these descend.
Remember too, the whitest milk you meet,
Of grateful flavour, pleasing taste, and sweet,
Is always best; and if it strongly scent
The air, some latent ill, the vessels vent."

In addition to this, it must be remarked, that she must be exempt from her catamenia. As a general rule, also, young milk should be selected when it can be had, even for an older child, provided the disparity be not too great.

In respect to the drinks for the child, they should consist, in healthy children, of nothing but pure water, and care ought to be taken to abstain from giving them ardent or fermented liquors. Nature never intended any thing stronger than water as the drink for children; this they enjoy greatly, and much advantage is occasionally experienced from its use, especially after children have commenced the use of animal food.

The period of weaning is one full of solicitude and pain to the affectionate mother; and it is consented to, with a reluctance that declares the pleasure which the act of sucking had produced; as well as betrays anticipations of dangers, which may await the change. On the part of the mother, there are various circumstances that may render weaning indispensably necessary. 1st, She may be attacked with some constitutional affection, which may so reduce her, as to make it highly improper she should keep the child longer at the breast. She may be so depleted in the course of acute disease, as to prevent the system from furnishing the proper quantity of food necessary to nourish the child. 2nd, She may be attacked with some local affection, that may render suckling extremely inconvenient, as well as improper; as milk abscess, &c. 3d, The supply of milk may be so diminished, even without any evident cause, as to render it altogether insufficient for the support of the child; consequently, both may be injured by a perseverance. 4th, Some writers have maintained, that when a woman who suckles a child becomes pregnant, she should wean the infant. This opinion can originate only from the idea, that under these circumstances the milk becomes altered in quality, and diminished in quantity. Our author is not aware, however, from his own experience, that these results must necessarily occur; and tells us, that he has observed, for many years past, the following rule: that if the milk disagrees, (as is readily known by its being almost immediately rejected in a state of hard curd, or in a thin, semi-transparent condition, with a peculiarly disagreeable smell,) the child must be separated; but if it do not produce these effects, the child may continue at the breast until the proper time of separation, or at least until some injurious effect manifests itself.

When the child has reached the eleventh or twelfth month of its age, it is generally thought to be sufficiently advanced to take it from the breast. But it is improper to lay down any rule on this subject, formed on the age of the child. It would be more proper to regard the presence of teeth, at whatever age of the child this may occur, as absolutely necessary to the success of weaning. This is the more likely to be the surer guide, as the cutting of the teeth is, in general, a certain indication of the state of the stomach, or of the digestive powers.

The situation of the child's health must have a decided bearing on the propriety of weaning; for it may be much reduced by previous illness, or labouring under actual disease, so as to render this privation highly injudicious. Therefore, weaning must not be thought of at this time. The period of the year will much influence a decision on the question of weaning.

"The season of the year may render this act convenient, inconvenient, or improper. 1st, The convenient season of the year will be all that period, when its temperature shall be moderate; as the months of March, April, May, June, October, or even early in November; when the nights are neither excessive in length, nor the atmosphere severe in temperature. 2nd, It may be inconvenient from both these last named causes; as the months of December, January, and February. 3d, It may be improper, in case of diseases arising from, or incident to, a certain part of the year, being always aggravated in newly weaned children; as in the months of July, August, and September. Therefore, weaning should be in part regulated by these considerations. When weaning has been determined on, and rendered proper by the condition of the child, it will in a great measure be prepared for this process beforehand, if it has been properly attended to, by having occasionally received other nutriment than the mother's milk. The task is then in part performed; and the whole of the trial may be rendered less severe, by the observance of the following rules:

> "1st, Accustom the child, from time to time, to take other food than its mother's milk, by feeding it on bread and butter, bread and milk, rice and milk, &c., or occasionally on beef, mutton, chicken, or oyster tea; or by giving small quantities of either of these substances in a solid form, as has already been directed. 2nd, Let the mother give the breast at longer intervals, and gradually prevent its being the principal support of the child. 3d, Let the child, after a little longer time, receive the breast as seldom as possible. 4th, Endeavour to excite an averson to the breast, and thus induce the child to withdraw itself from it, rather than permit it to feel the want of the breast as a privation. 5th, This aversion may be excited in one of two ways—either by touching the nipple with some bitter or disgusting substances, as aloes, garlic, assafœtida, &c.; or covering them with a forbidding one, as black wool, ink, court plaster, &c. 6th, When you commence this severe process, be firm; and let no importunity of the little pleader overcome your resolution, or your work will never be finished."—p. 191.

With due care, the woman will not experience much inconvenience from weaning. But in the majority of cases, there will be a painful distention of the breasts; for the relief of which, the following precautions must be observed:

> "1st, After the child is separated, she should abstain as much as possible from all fluid nourishment; eating nothing but the driest food, as crackers, boiled rice, potatoes, boiled meats, or poultry. 2nd, Let her avoid all salted articles, as they will increase thirst, and oblige her to drink. 3d, Let her drink nothing but pure water, and that in small quantities. 4th, Let her take a brisk dose of salts, if the pain be considerable; and avoid exercise as much as possible. 5th, If the breasts be very much distended, and very painful, rub them with a little warm sweet oil, or fresh hog's lard. 6th, Let the breasts remain without drawing, as long as it may be supportable; and when drawn, let it be only in such quantity as shall remove the distention. 7th, Let the intervals of drawing be each time longer."

The succeeding chapter contains an accurate and tolerably minute account of *teething*; from which our limits will not allow us, however, to make many extracts. Speaking of the instinct by which children are led to press upon every thing hard or resisting that is presented to their mouths, our author remarks:

> "We are of opinion, that the following advantages are derived from indulging this instinct in children: 1st, it relieves the pain or anguish of the tender gums, by pressing upon them, as squeezing an inflamed finger, as in felons or whitloes, and in many other instances; 2nd, by gently stimulating the gums, absorption is unquestionably promoted, and the teeth, in consequence, more quickly appear; 3d, it seems constantly to promote the salivation, by which the engorged vessels relieve themselves."

Dr. Dewees does not think that very hard substances, as ivory, coral, &c., made *round*, are as proper as such as are softer or flatter, as a piece of orice root, scraped liquorice root, or a flat ivory ring. The rubbing of the gums with the finger, affords great relief to the little sufferers; but honey, powdered sugar candy, &c., should be prohibited. We pass over the observations on second dentition, and proceed to say a few words on "the food proper for children, after the first dentition, and weaning." (Chapter 9.) It must be evident to every one, that to feed the child upon such food as would require great powers of mastication, would be highly injurious. But it is not the quality of the food alone that is to be attended to when a change is contemplated—we should be particularly careful that this change be not made too suddenly. In respect to the interval between the meals of the child, great regularity should be observed; but it is not possible to lay down any general rule on the subject, since the intervals must, in a great measure, be contingent upon the powers of the stomach itself; and these must necessarily vary in different children. A sufficient time must be allowed for the complete digestion of the aliment contained in the stomach—nothing being more injudicious than to disturb the digestive process by any new introduction of fresh food. The food of children, at this period, cannot be too simple. The various jellies from vegetable substances, as of tapioco, rice, sago, or arrowroot, are very proper, especially when combined with fresh milk. They must not be given in improper quantity, as during dentition the system is almost always in a highly excited state, and is readily roused, by many causes, into fever. Some parents find it very difficult, however, to resist the importunities of their children for food; and hence arises that habit of indulgence, which has made many victims among children, at this early period of their life.

When children have their first teeth complete, they may be indulged, now and then, with small quantities of animal food; but it should not constitute their principal support, since it may overturn the stomach, and too much excite the system. The drink of children should be pure water, or milk and water, and on no account should they be allowed liquors of any sort whatever. All kinds of meat are not proper, as among them, some are of more easy digestion than others. For these reasons, beef, mutton, lamb, venison, fowls, turkeys, pheasants, partridges, &c. are to be preferred to veal, pork, pig, geese and ducks. These substances for young children, should be plain boiled or roasted, and care must be taken that they be not too rare. As a general rule, animal food should be taken in the morning or at noon, though the latter period must be preferred; nor should less attention be paid to the quantity given. Before puberty, moderate portions must be allowed, and there should be a predominance of either vegetables or milk. Only one vegetable should be given at a time, and consist of either rice, potato, spinage, asparagus, turnip and squash. Beans of every kind, cabbage, beets cooked with vinegar, peas, sorrel and cucumber, are far less proper.

In regard to food which may be absolutely hurtful to children, Dr. Dewees enters pretty largely. We cannot follow him on this important subject, and must take the liberty to refer to the book itself for much interesting matter.

Under the head of exercise, our author treats 1st, of the exercise and motion useful or proper for very young children, up to the period of their beginning to walk; 2nd, walking; 3d, other modes of exercise. A. riding in a carriage; B. riding on horseback; C. games of various kinds; D. Dumb bells.

It must be admitted by every one, that the sooner we commence with this important part of physical education, the sooner will the muscular system acquire the tone so important to the many other functions of the body. But it is necessary that exercise should be proportioned to the age and strength of the child. In the early period, carrying the child in the arms, and placing it in such a position, that it will have a free action of its little muscles, is all that can, with propriety, be done; for the practice common with many nurses of placing the infant erect or sitting, at a too early period, is decidedly wrong.

"It is evident to every reflecting mind, that the incompletely ossified spinal column, is ill calculated, at the period now supposed, to sustain the weight of the whole body, and the head besides, and when forced to do so by this injudicious management, it must yield in a greater or less degree; hence crooked spines." p. 223.

Dr. DEWEES lays down the following rules for carrying children on the arm:—

"1. It should never be so placed upon the arm, as to oblige it to support itself, or fall backward. To prevent this, the hand of the arm on which the child does not rest, should be so placed over its body and chest, as to give a certain support to the whole body. 2. It should never be carried upon the arm, without additional support, until the muscles of the neck have acquired sufficient strength to carry the head straight, for reasons already suggested. 3. It should not always be confined to one arm; for if it be, it will, from maintaining one position too long, contract a habit of leaning to one side, or become crooked—therefore the arms should often be changed. 4. It should not be made to put an arm around the nurse's neck, while placed on the arm for carrying; as it will do injury to the side and back, by forcing out the shoulder-blade. 5. It should not be too firmly grasped by the nurse's arm, lest it bend or distort the bones of the pelvis, thighs, and legs; and on this account, the child should not be often trusted to those who are unskilled in carrying one; as they always embrace the child very firmly, from an apprehension they may let it fall—an experienced nurse can carry a child without much pressure. This rule is of especial consequence to such children as may be disposed to rickets."

Dr. DEWEES is decidedly of opinion that children ought to be allowed to learn to crawl, and that parents should never endeavour to interrupt this acquirement; because he has constantly observed, that those children who do so are always more robust and better confirmed in their walk, (though they sometimes do not begin so early,) than those who have been taught to walk without this useful intermediate step. Parents and nurses should be cautioned against the unnatural practice of forcing very young children to "find their feet;" since curved legs are almost sure to result from the practice. Children disposed to rickets should be particularly preserved from this mischievous exercise. Much advantage is oftentimes gained by the well regulated use of "the baby carriage," so constructed as to prevent all danger of oversetting. It should be drawn steadily, at a very moderate pace, and never violently jerked. Riding on horseback is perhaps the most beneficial exercise for the child who has attained the proper age for it. Therefore, a child, either male or female, should be early instructed in this important art.

Our author enters fully on the advantages of bathing and cleanliness, and expresses his opinion, founded on an extensive experience, that for children, the warm is decidedly more beneficial than the cold bath. The reasons he adduces for adopting this opinion, are, we believe, conclusive, and the whole chapter is highly deserving of a careful examination.

The subject of "dress" is one of no inconsiderable interest, and has been treated by Dr. DEWEES, with a talent which could result only from long practice, and a close examination. We cannot devote more time to this subject, than to state that the dress of children should be loose, and we perfectly agree with our author in opinion, that much benefit must result to the future generation, from the present mode of dressing children, and the adoption of suspenders, by which the necessity of dressing them tight is obviated. In respect to the quantity of clothing which ought to be allowed a child, it will only be necessary to state, that children should be covered sufficiently to protect them from the action of cold, and that *extremes* must be carefully avoided. In a climate as changeable as ours, it is indispensable, that a corresponding change be observed in clothing, not only in different seasons, but at different periods of the same season. The quantity of dress should likewise be varied agreeably to their mode of life; those who take much exercise in open air, requiring much less clothing than such as lead a sedentary life.

The next subject which engages the attention of Dr. DEWEES, is the period included between second dentition and puberty. He lays down excellent rules in regard to the eating, sleeping, and exercise of children at that age. We are sorry that our limits will not allow us to offer to the reader, a sketch of this interesting chapter; but as all these rules are linked together, we are compelled to refer to the volume itself, which we hope to see before long in the hand of every student and practitioner.

As this article has extended already to considerable length, we must postpone to a future number, an analysis of the treatise on the diseases of children, which forms the second division of the present volume. In concluding this analysis, we must beg leave to congratulate students on their possessing so valuable a guide for their conduct, in the physical treatment of children. It will constitute no mean addition to the growing Medical Literature of our country; and when in a second edition a few repetitions are omitted—the language a little purified, it will safely suffer a comparison with any book extant on the subject.

ARTICLE XI.—*Anatomie comparée du Cerveau dans les quatre classes des Animaux Vertébrés appliquée à la Physiologie et à la Pathologie du Systéme Nerveux. Par* E. R. A. SERRES, *Chevalier de l'Ordre royal de la Légion d'Honneur, Médecin ordinaire de l'Hôpital de la Pitié, Professeur agrégé de la Faculté de Médecine de Paris, Chef des Travaux Anatomiques de l'Amphithéâtre des Hôpitaux, Professeur d'Anatomie et de Physiologie du même établissement, Membre de l'Académie royale de Médecine de Paris, de la Société Philomatique, de la Société de Médecine de Stockholm, &c.*

Ouvrage qui a remporté le grand prix à l'Institut royal de France. Tome premier avec un Atlas de seize planches grand in 4° *representans trois cents sujets, dessineés et lithographiées par Fertel sous les yeux de l'auteur, et accompagnées d'une Explication. P.* 576, *avec p.* 112 *d'introduction. Paris.*

An Exposition of the Natural System of the Nerves of the Human Body, with a republication of the papers delivered to the Royal Society, on the subject of the Nerves. By CHARLES BELL, *Professor of Anatomy and Surgery to the Royal College of Surgeons; Teacher of Anatomy in the School of great Windmill Street, and Surgeon to the Middlesex Hospital. Republished by H. C. Carey & I. Lea, Philadelphia,* 1825, *pp.* 165, *with plates.*

As much of the study of medicine, and especially of pathology, consists in tracing the reciprocal action of the organs of the human body, whereby disordered function in one part is followed by disease, in other parts near or remote, we cannot too sedulously study the nervous connexion between the several organs.

The nerves are the chords, and the brain the centre, of sympathies, and without which there were no sensations and consciousness.

The larger the development, and the more vigorous the action, of the entire nervous system, the higher does the animal thus endowed, rank in the scale of created beings. Not only then is this a subject of paramount importance to the physician, who desires to ground his therapeutical principles on something like demonstration and experiment, but also to the philosopher, who would wish to study the co-ordinate action of mind and matter, and attain a knowledge of the laws by which organization is made the conductor, and, for a time, the recipient of those nobler powers of reason and thought; those subtle essences, the intimate nature of which has hitherto escaped, and probably ever will, elude our investigations.

The prediction of the celebrated Frenchman,* that if we are to have a correct philosophy of the human mind, the discovery must come from the physician, seems nearer its accomplishment than was until late years imagined or expected. In the instances of Reid, and Paley, and Brown, we find that in proportion as metaphysicians and ethical writers adhere to physiology or the study of life, as evidenced in the corporeal functions, they become more able expounders of the operations of intellect, and of the influence of sentiments. Hazarded as may seem this assertion, and open as we may herein appear, to the charge of professional pride, we stand prepared, if not in these pages, at least in future numbers of this Journal, to make it good.†

In approaching the subject of the nervous system, it is peculiarly fitting that we should possess sufficient data in a knowledge of structure and successive formation and connexion, on which to ground our belief of functional action. Such data are most plausibly presented to us in the works of M. SERRES, which we think goes far to fulfil the first conditions in physiology, viz: that a part is to be found developed in proportion as it is required to perform office, and its junction with another part is to precede its co-ordinate or subservient connexion in function with that part. This is the first division of the physiology of observation. The next consists in a careful noting of the phenomena of health in a perfectly organized and living body, whereby we see impressions on one organ produce vital motion and sensation in another, leading us, of course, to infer, that there is a necessary material or structural connexion to produce the sympathy between the two organs. Evidences of this nature are furnished in the work of Mr. CHARLES BELL, to which we propose directing the attention of our readers in the present article. The completion of proofs of the peculiar function of an organ or animated structure, is found in the phenomena attending its diseased or pathological condition, and on this head we shall find that both M. SERRES and Mr. BELL, furnish us with many interesting details. The means intermediate between the two above-mentioned ones for the study of physiology, is by experiments, made on living animals, which go to prove indirectly the functions of a part and its relation to others, by showing the effects produced by its removal. This shall form a distinct branch of inquiry in the succeeding numbers of this Journal, and shall be followed by an analysis of the valuable works of the French Pathologists on the alterations of structure and diseases of the brain, spinal marrow, and nerves. We hope in fine to furnish our readers with a brief but authentic history of all the departments of medicine, and a record of the laws of each, deduced from experiments and observation. While we draw freely from the past, we shall not, however, be unmindful of the present. It is not so much a nation or a year that we desire to commemorate, as the successful efforts of our profession, at all times and in all countries to fix, by careful experiments and observation, and cautious inductions, the fleeting characters of disease, and the rapidly alternating phenomena of function.

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* Descartes.

† "IV. Happiness consists in health. By health, I understand, as well freedom from bodily distempers, as that tranquillity, firmness and alacrity of mind, which we call good spirits, and which may properly enough be included in our notions of health, as depending commonly upon the same causes, and yielding to the same management as our bodily constitution." *Paley's Moral Philosophy, Chap. VI.* How can the above-mentioned states of the mind be treated of without a knowledge of the condition of the body on which they depend, and of the corporeal changes by which they disappear.

The first work which we propose analysing, places its author, M. SERRES, on very elevated ground, as a patient and laborious anatomist and physiologist. His field of study and observation has been indeed of the most extensive kind: equal to that enjoyed by any living, or perhaps we may add any preceding physician, for the investigations into all the varieties of animal structure, and of healthy and diseased function; hence the additional interest which he throws on all physiological inquiries, in their pertinency of application to pathology, and the support which, in his hands, the latter imparts to the former—an advantage this, denied to the man of mere reading and experiment. His work, "Des Lois de l'Osteogenie," gained him the prize for experimental physiology in 1820, from the Royal Academy of Sciences, and the one now under consideration, was productive of a similar honour in 1821. His treatise on apoplexy, composed in the same cautious spirit of induction from ascertained facts, and observed phenomena, has already, by means of a translation in a respected cotemporary journal, made him advantageously known to the American physician.

Without any very pointed reference at this time, to the real or presumed priority of view on the part of GALL and SPURZHEIM, REIL and TIEDEMANN, respecting the formation and progressive development of the several parts composing the human brain or encephalon, or attempts to estimate the correctness of their observations and opinions, comparatively with those of our author, we shall at once proceed to give the grand outlines of his work; not that we intend to waive the numerous corroborative details with which he so lavishly furnishes us, nor forego our right of weighing them in the same scale with those presented by the above-named German anatomists. This task we shall endeavour to accomplish ere we bring our review to a close; but at present our readers will, we are sure, prefer becoming acquainted with the leading facts and deductions of M. SERRES himself, to any arguments and hypotheses which may grow out of his differing from others.

Fortunately for our purpose, the author has, in his preliminary discourse, consisting of more than a hundred pages, and in the concluding chapter of his work, furnished us with a full and well measured outline of his observations and inferences, so that in using his own language, we run no danger of being accused of misrepresenting him.*

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* We have said above, that M. SERRES has enjoyed opportunities of no common kind for prosecuting the study of physiology and pa-

In his office of Professor of Anatomy and Physiology, at the large hospital of La Pitié, he was in the practice of devoting a portion of his lectures on anatomy, to the physiology and pathology of the nervous system. After having displayed the changes which occurred in the functions of the human brain, according to the part disorganized by disease, he endeavoured to produce similar changes artificially, in the individuals composing the four classes of the vertebral animals. He thus threw light on pathological researches by physiology, and on physiology by pathology.

He was, however, often arrested in this part of his course, by the difficulty of determining the divisions of the brain in the three inferior classes of animals. Entertaining doubts as to the accuracy of the guides which anatomists had usually followed, he thought at the same time that improvements might be made. He was particularly struck with the felicity of the comparison, made first by **Geoffroy St. Hilaire**, and subsequently by **Cuvier**, between the bones comprising the heads of the animals of the three inferior classes, and those of the head of the embryos of the mammiferæ, and the results to which it gave rise. He thought he could perceive in the encephalon of the inferior classes, the permanent

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thology, and as we hope in the future numbers of this journal, to benefit ourselves and readers by references to his other works, it may not be unacceptable to them, to show on what grounds our assertion is founded. In the early part of his medical career, he derived from the lectures of the celebrated **Cuvier** and **Dumeril**, a taste for comparative anatomy, in the study of which, he was subsequently enabled more fully to indulge, from his intimate connexion with that distinguished naturalist, **Geoffroy St. Hilaire**. Appointed in 1812, superintendent of the anatomical labours at the grand amphitheatre for the hospitals, and professor of anatomy and physiology in that establishment, he endeavoured to apply the ideas acquired by comparative anatomy to the science of man, and with a success which convinced him of the propriety and utility of the combination. The anatomy and physiology of the nervous system were always favourite studies with him, and as far back as 1810 and 1811, he had begun his researches into the organic diseases of the brain. In 1813, circumstances growing out of the war, which terminated in the occupation of Paris by the allies, caused an accumulation of the sick soldiers, beyond the ability of the regular medical officers to manage, and in consequence, many of the civil were converted into military hospitals. Among the former, that of the Pitié, of which M. **Serres** was one of the physicians, was specially appropriated to the diseases of the us system. During seven years that the hospital preserved this ion, two thousand cases of this class of maladies were passed w before him.

representation of the fugitive forms of the same organ in the embryo of the mammiferæ. This was his point of departure. Profiting by the happy ideas of GALL and SPURZHEIM, he brought back the brain of birds to the type of the mammiferæ. He then passed on to the brain of the reptiles, which was more simple, and terminated by the fishes, the brain of which had been a perfect labyrinth of doubts.

A skilful painter, M. FERTEL, had the patience to follow him in all his investigations; and to paint, under his own eyes, the twelve hundred figures, lithographic copies of which now constitute the atlas accompanying the published work. Finally, in the friendly assistance of the two CUVIERS,* and of GEOFFROY St. HILAIRE, our author acknowledges having had opportunities afforded him, without which he might in vain have attempted so extensive a range of inquiry.

M. SERRES begins his preliminary discourse, by telling us, that although anatomists and physicians had dissected the brain three thousand years ago, and for three centuries past had made it the more especial object of their investigations, still the foundation of this part of the science is not yet laid, the elements of the encephalon are not determined even in the vertebral animals.

He next endeavours to account for this omission, in the fact of the ancient anatomists, forbidden by the prejudices of paganism to dissect the human body, being obliged to have recourse to those of animals; and subsequently, by a singular re-action in the sixteenth century, the science taking quite an opposite direction, man was then dissected, and every thing referred to him. The anatomy of animals was inferred from that of man. No very great prejudice resulted to the study of the brain, so long as observations were confined to the mammiferæ; since, proportions kept, this organ is the repetition of itself, in the different families composing the class.† But, on attempting to examine the brain of birds, by what was thought a certain method, difficulties immediately occurred. The cerebrum in front, and the cerebellum behind, were soon recognised in these animals; but at the middle part, a pair of lobes was met with, which had nothing analogous in man, or the mammiferæ, generally. The chain of resemblance being broken, was not again linked, when the brain of fishes came to be studied. The difficulties were complicated by anatomists neglecting the precept of VAROLIUS and BARTHOLINUS, and giving into the practice of dissecting the human brain from its upper part downwards, and that of the mammiferæ, from before backwards.

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* In France, the celebrated or great Cuvier is at present usually distinguished as Baron Cuvier. The other is Frederick Cuvier, the brother. When we speak of Cuvier, without any other specification, we allude to the Baron.

† Our readers need hardly be reminded of the generally recognised divisions of the animal kingdom. These are four: 1, *Animalia Vertebrata*; 2, *Animalia Mollusca*; 3, *Animalia Articulata*; 4, *Animalia Radiata*. The first or vertebral animals, have the common cha-

The circumstance of form, which had so successfully guided anatomists in the study of the mammiferæ, and led them to recognise the cerebellum and cerebral hemispheres in birds, was of no avail when they came to fishes.—p. 5.

At first glance, there is nothing in this last class to remind us either of the encephalon* of the mammiferæ, or that of birds. This organ in fishes is composed of a double series of bulbs, in a line from before backwards, sometimes to the number of two, more frequently of four, and not seldom of even six. To which pair ought we to give the name of cerebral hemispheres? Is it the anterior, middle, or posterior? To what part of the brain of the superior classes refer the other lobes;—and on what lobes establish analogies and differences? The cerebellum itself, which it is difficult to overlook in the other classes, was still in fishes an object of doubt. Sometimes, this part is single, and without division, as in the superior classes: in other cases, it is a double organ, composed of symmetrical leaflets, rolled on each other along the sides of the fourth ventricle. In a great number, a peculiar body

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racters of a brain and spinal marrow, inclosed in a long case, consisting of a cranium and vertebræ; ribs, and also the bones, comprising the scaffolding of the body, attached to this middle column; muscles in general covering the bones on which they act; and the viscera inclosed in the head and trunk. This division is subdivided into four classes—1, The *mammiferæ*, including man and quadrupeds, and distinguished by a viviparous generation. The three other classes are oviparous. The second class includes *Birds*; 3, *Reptiles*; 4, *Fishes*. —*See Cuvier's Régne Animal.*

* We use the term encephalon as synonymous to, though less ambiguous, than brain; and as indicating the entire contents of the cranium.

is detached from the posterior lobes, and makes the organ more complex. This body, which sometimes resembles the uvula of the human subject, and at others the epiglottis, is placed in the form of a cover or lid to the fourth ventricle. It is more frequently simple; at other times, as in certain rays, it is double, and the posterior half directed to the fourth ventricle, and the anterior one covers the posterior lobes. How, amid all these transformations, are we to detect the cerebellum?

The base of the encephalon of fishes is scarcely less variable than its upper portion. What most strikes us in the former, are two rounded tubercles, which, by their situation and form, have some resemblance to the *eminentiæ mammilares* of the human brain. Nor have there been wanting persons to admit this analogy, and to exclaim, how wonderful, that these eminences, or marks of the most elevated organization, should be found in fishes, which seem so low in the animal scale! Following up this illusory idea, their posterior lobes were compared to the cerebral hemispheres; and anatomists pretended to find in these lobes, the optic bed, the *corpus striatum*, *cornu ammonis*, the *fornix*, and even the *corpus callosum*. Hence, an attempt to elevate the fishes above the two classes of reptiles and birds, with an entire oversight of all the other anatomical and zoological characters of the vertebral animals.—pp. 6, 8.

As already hinted, it became then an object of paramount necessity, to establish the proportionate relations of the different elements of the encephalon in the vertebral animals, by detecting in all the classes the identity of the parts of which this organ is composed, and to establish this discovery on bases the same for all. Comparative anatomy rests entirely on the certainty of the discrimination. The difficulty consisted in recognising this identity in the midst of the variety of form, relations, and proportions, presented in all these elements. Physiology had lost its natural simplicity of character, and certainty of results, in consenting to be under the influence of a dogma that taught the pre-existence of germs, which were thought to possess the same number of organs and connexions as the animal of which it was assumed to be the type. The study of organization was stopped by such hypothesis. The butterfly was seen in its larva state; the frog in the first rudiments of the tadpole; the entire bird in its egg; and the complete organization of the mammiferæ, in the first mucus, which separated them from non-existence. Monsters did, indeed, for a while, form an exception to this general explanation; but, as is customary with system mongers, the difficulty was easily obviated, by imagining the germ of monsters, the existence of which had been eternally preserved in the ovaries of the females.—pp. 11, 13.

Such a course of mental aberration could not last long, when men desired to ascend from facts to principles, and test principles by facts. The stupendous conception of the pre-existence of germs was supplanted by the more simple, but not less majestic idea of the successive formation of parts.

Embryos are not, as once thought, the miniature of adult animals. Before attaining the permanent forms, their organs pass through a number of fugitive states, more and more simple, as they are nearer the point of departure.

What are the general relations,—what the laws, which preside over the organization of animals? This, says the illustrious Cuvier, is the end to which ought to be directed all the efforts of those who cultivate the natural sciences.

Acting on this recommendation, Dumeril, by embracing in one view the relations between the vertebræ and their muscles, emits the singular idea, that the cranium of animals is only a large vertebra, and the brain is the spinal marrow swelled out. This opinion, at first looked upon as the extreme of paradox, is now received as classical, and as having changed the face of natural history, by introducing a division entirely novel—that of homology.

But first, let us review the efforts of the human mind, in this department of science. Harvey, with his wonted investigating spirit, observed the first rudiments of the heart of the chick, and imagines that this point, which he sees pulsate, is the root of the entire being; he thinks he sees it spread its branches into all the organs; and he announces that the animal is formed from the centre to the circumference.

Malpighi, who paid the forfeit of his life to the microscopical examinations which have immortalized him, went still farther than Harvey, in explaining the formation of the embryo. He observed a fibril anterior in its appearance to that of the heart. This central fibril, which he denominates *keel*, seems to him to be the

w, which he thence regarded as the origin of all the parts, all, according to him, nervous. BOERHAAVE, a great admirer of MALPIGHI, gave to this idea all the illusion of his name, and the charm of his style. Soon afterwards, HALLER, ALBINUS, and their most distinguished disciples, admit, as a general law, the central formation and development of the osseous system.

Strange, exclaims M. SERRES, nature had been interpreted in an inverted sense, and she was supposed to follow a course diametrically opposed to her real one. Ought we then to be astonished if her laws have been unknown? if, discouraged by their fruitless efforts, Zootomists have despaired of ever discovering them?

Our author now proceeds to lay down his fundamental positions. The first and principal one, the law on which all zoogeny reposes, is *the eccentric development of animals*.

Study, says he, the development of the membranes which precede the appearance of the germ, and you will see all of them formed from the circumference to the centre. Observe all the grand organic apparatuses, and you will see them constantly following the same direction.—pp. 21, 24.

"From this eccentric march, are derived all the laws of organization; every organ will be primitively double; its parts, at first isolated, will advance to meet each other, and will unite at the centre of the animal, to constitute those organs called single, because they are considered as already formed.

"All these single and symmetrical organs will be on the median line. The nearer they approach to the centre of the animal, the more the traces of their formation will be effaced; the more remote they are from it, the more readily shall we discover the indices of their primitive formation.

"I have called *law of symmetry* the principle of the double development of the organs.

"I have named *law of conjunction* the principle of their union. From these two laws are derived the entire formation of the organs."—p. 25.

The application of these laws is next made to the principal organic systems, beginning with the osseous. We have not time now to follow M. SERRES in these details, which seem, however, to bear him out in his positions. The ossification of all the parts of the skeleton is eccentric. In the trunk, the ribs are first formed, then the lateral parts of the vertebræ, and finally their bodies.

In the pelvis, the osseous development begins at the ilium, then comes the ischium, and finally the pubis. In the cranium, the progress of ossification is similar. From this eccentric march, necessarily follows the double development of all the single or solitary pieces of the skeleton, forming its centre. Hence there are primitively two half spinal canals, and two ossa sacra. The os hyoides, the lower jaw, the sternum, which most usually are single pieces, are, without exception, double in the embryos of all the vertebral class.

The formation of the articular cavities, that of the foramina, and of the osseous canals, are the result of the law of conjunction, or the interlocking of the primitive pieces of which the bones are composed.

The correctness of this view has been admitted, and new facts in its corroboration have been adduced by CUVIER, GEOFFROY ST. HILAIRE and OKEN. DUTROCHET has shown its application to the class of reptiles; and LATREILLE and AUDOUIN have verified it; the former in regard to the solid parts of the crustaceræ, the latter in reference to the skeleton of insects.

Other organic systems are, in their formation, obedient to the same law. The intestinal canal is a canal of conjunction, resulting from the double cementing, anterior and posterior of the two laminæ, of which it primarily consisted. The same is the case with the aorta, the trachea arteria, the larynx, the œsophagus, and the genito-urinary organs.

The formation of the muscular system is explained entirely by the application of these fundamental laws. Passing from the most simple muscles, to the most complex, we arrive at the heart, which is to the muscular system what the cranium is to the osseous, and the encephalon to the nervous. We may see the heart, at first so simple, arrive by a series of evolutions, to the complicated structure which it offers in the mammiferæ, and in birds. M. SERRES describes minutely all these successive changes, which we must omit, in order to arrive at the explanations which he furnishes us of the structure and growth of the nervous system.

"If, says he, you observe the tender embryos of animals, you will find that the lateral nerves of the trunk, the lateral ones of the head and pelvis, are those first formed; that they exist independently of the spinal marrow, or of the brain. These nerves have attained their full growth when the cerebro-spinal axis (brain and spinal marrow) is yet liquid, and when it has not even assumed its primitive forms. You will find the nerves without communication with the encephalon, or with the spinal marrow. The nervous system then, is developed from the circumference to the centre, and not as was supposed, from the centre to the circumference."—p. 36.

This is the grand position, to the enforcement and illustration of which, M. SERRES devotes his work. The task was one of no common labour, and its fulfilment is, to all appearances, in a style of successful execution, corresponding with the expectations raised of its intrinsic value, and application to other branches of medicine.

In leading us to the conclusion that the nerves originate in, or are formed simultaneously with the other parts of the organs, and that their insertion or place of conjunction is at the cerebro-spinal axis, M. SERRES has placed us under the greatest obligations, by furnishing us with a series of arguments supported by most numerous observations on all animals. But we are of opinion, that, without materially diminishing his own fame, he might have distinctly alluded to what his countryman, the great BICHAT, says on this subject, in the chapter on the Nervous System of Animal Life.—Art. I.* "The word origin ought only to be understood," says this physiologist, "as relatively to the anatomical arrangement. In fact, in one respect, the nerves are formed at the same time with the brain; *they are rather the organs of communication with that viscus, than its real prolongations.* In another view, if we attend to the functions of one part of the nervous system, that which relates to sensations, we shall find *that the termination is at the brain, and the origin at the exterior.* Do we not say, that the nerves go to such and such parts, that the arteries are directed round, &c. These are so many metaphorical expressions, the meaning of which is rectified by the slightest reflection."

Mr. ABERNETHY borrowing, we presume, this idea from BICHAT, gives it greater extension and clearness, when he says—"It is no unfrequent occurrence for malformed children to be born without a brain, yet with a perfect nervous system. The most rational idea, therefore, we can entertain on the present subject, is, that *the nerves are formed in the parts where we find them, and that*

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* Anatomie General. T. I. p. 147.—Paris, 1818.

they are connected to those parts of the organs from which we are accustomed to say they proceed."*

MAGENDIE, in his 'Summary of Physiology,' tells us expressly, "It is evident enough, that the brain is not formed by the union of the nerves, and it is equally certain that the nerves do not arise from the brain. By these expressions we merely mean to describe, metaphorically, the disposition of the two extremities of each nerve."—p. 88. Balt. Edit.

SPURZHEIM, in his lectures on the structure and functions of the nervous system, used, we well remember, to deprecate the idea of considering the brain as giving origin to the nerves, or to the spinal marrow; and to assure us that there was no proportion between these three divisions. It certainly would not, he added, be correct language to say that the veins arise from the heart, or that the branches of a tree spring from the root.

These quotations and remarks are not made in a spirit of querulous remonstrance against M. SERRES' silence; but are intended to throw light on the history of inquiries into a very important part of animal structure.

The spinal marrow follows the same law as the nerves.

"Open young embryos, (says our author) you will constantly find that the spinal marrow is at first composed of two small channels, right and left, entirely separate from each other. In a more advanced period, you will discover these two chords uniting before, on the median line, by an ingraining or interlocking similar to that of the osseous system. The two chords then form a long channel, open behind in its whole extent. At a later period, again, you will see these two chords ingrained behind as had been done before, and this long channel converted into a tube occupying the centre of this axis."—p. 39, 40.

In some animals, the medulla spinalis is destitute of a canal, but still the same law of formation presides here as in other cases; and if we examine attentively, we shall find eccentric layers successively formed in the interior of the canal, and deposited from without inwards until it is entirely obliterated.

Extending our views to the contents of the cranium, we find the peduncles or crura of the cerebrum double and separate, like the primitive chords of the spinal marrow, unite before by a junction similar to that of the latter. We next discover a large channel, circumscribed by the sides of these two chords. (p. 41.) The prominences, which surmount them above, are likewise symmetrical. Backwards, we see the optic beds—forwards, the *corpora striata;* the enlargements on one side are precisely the repetition of those of the opposite side.

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* Anatomical Lectures delivered before the Royal College of Surgeons.

It is the same with the medulla oblongata, the optic lobes or the tubercula quadrigemina—they are primitively formed of a double lateral chord.

The cerebellum is in all embryos, at first, composed of two lateral plates, right and left.

The olfactory lobules are likewise double in all the classes, and at first isolated from each other, whatever their smallness or size.

There are constantly, also, two cerebral hemispheres; these are separate in the bony fishes, united in the cartilaginous ones, but divided in the median line by a deep fissure. In reptiles, birds, and mammiferæ, they are united together by transversal bands, known usually by the name of commissures.

All these commissures, single organs in perfect animals, are primitively double in embryos.

It is thus with the commissure of the optic lobes or *tubercula quadrigemina*, so developed in birds; with that of the posterior prominences of peduncles of the cerebrum; with the anterior middle ones of the optic beds, (thalami nerv. optic.)

The pyramidal bodies of the medulla oblongata, which, in the mammiferæ, serve as a commissure to a part of the cerebellum, were at first double.

Constantly, also, in the same class, we observe a double *pons varolii.*

The *corpus callosum*, which is the largest of all the commissures, participates in the common law of development, since, in all the embryos of the mammiferæ, each hemisphere has primitively its half *corpus callosum* separated from the corresponding half of the opposite hemisphere.

The vault (*fornix*,) the development of which is so complicated, is subjected rigorously to the general principle of formation, in its being double in all the embryos of the superior class.

It is the same with the partition designated by the title of *sep-*

tum lucidum. However thin may be this part, it is always formed of two plates, right and left.

This partition is to the nervous system, what the vomer, and the perpendicular plate of the ethmoid, are to the osseus.—p. 534, 6.

The attentive reader will be struck with the general sameness of result in our author's observations, and those of Gall and Spurzheim, in so far as regards the admission of the duplicity and symmetry of all the parts of the brain on each side the median line. While M. Serres, however, insists on the growth of these parts always advancing from the circumference to the centre, the anatomists just mentioned, consider this holds good only in reference to one portion or the converging fibres, which, meeting from opposite sides of the brain, form, by their junction, the commissures, above described. So well satisfied were they of the distinct and separate formation of the two halves of the encephalic commissures, that they express a doubt whether the laminæ from opposite sides really form a union by being lost in each other: and suggest the possibility of their approximating in the form of a seam. They express, moreover, their opinion of the use of these commissures as being intended to combine in function the opposite hemispheres of the brain and organs of animal life. "We, say they, look upon all the nerves, not only those of organic, but also those of animal life, as so many independent systems; there are, however, many communications between them."* They then go on to speak of the returning or converging fibres of the nervous system and the commissures.

We the more willingly supply the omission of our author, in respect to the anatomical views and discoveries of Doctors Gall and Spurzheim, because, by his frequent allusion to, and mention of them, he evidently acknowledges the weight which their opinions have obtained on the continent, in all points connected with the structure and formation of the brain and nervous system; and, also, because he seems particularly desirous of subverting their hard earned authority.

With this view, and as conformable to his doctrine of eccentric development, he denies the pre-existence of the gray or cineritious part, to the white or fibrous. He grounds this belief on his observations of the formation of the nerves in the organs, prior to their junction with the brain; of the intervertebral ganglia being anterior in their creation to the spinal marrow; and of this axis itself being formed from the circumference to the centre. The ganglia, which abound in gray matter, and which Gall and Spurzheim considered as matrices of the nerves, cannot, M. Serres contends, possess this office; since the latter are formed before the former. Finally, the gray or cineritious matter cannot be the organ of nutrition for the white matter; as this latter is constantly the first formed, and in certain animals, as in the genus asteriæ, the nervous system is, according to Cuvier, composed entirely of white matter.

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* *Recherches sur le systeme nerveux en general, et sur celui du Cerveau en particulier.*—Sect. VII, as translated in Combe's Phrenology.

Let us now see how these positions, laid down so frankly and imposingly, are sustained by other investigators into the minute structure of the nervous system. And first, then, we know that in an embryo of six weeks, the human brain is represented by a sac, formed by a soft and vesicular membrane, the pia mater, and continuous with a canal, which represents the spinal marrow—both containing a fluid nearly transparent. In the second month, the substance of the brain and chord, examined with a suitable magnifier, appears to possess no fibrous structure, but to consist of extremely minute globules. In the third month, we find the corpora restiforma and a thin cerebellum: the pedunculi, the optic beds, and corpora striata, are more sensible. In these, it will be remembered that the gray matter predominates; while the tuber annulare, corpus callosum, fornix, and cornu ammoni, (white or fibrous matter,) are not yet visible.* So far, then, we have no evidence of the prior formation of the white substance, nor, consequently, of the accuracy of M. Serres' assertion.

The asteriæ have been examined by Gall, Burdach, Merkel, and Konrad; and all these anatomists have, contrary to the observation of Cuvier, found as many ganglia, or collections of gray matter, in the nervous rings, as there were rays or grand ramifications from this ring. In fact, Merkel joins Burdach, in admitting as a law, that wherever there is a nervous system, there exists gray matter.

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* Tiédemann.

It is not, perhaps, with much propriety, that M. Serres cites Cuvier, as the one arresting the course of Gall and Spurzheim's hypothesis of the prior formation of the gray or non-fibrous substance, by his report on the subject to the Academy of Sciences. The language of that report, prepared by Cuvier and his colleagues, is, "that the gray substance is the origin and aliment of all the nervous fibres, and that it is by its means that they are reinforced and multiplied."

Conceding even that the development of the nerves is prior to that of the brain and spinal marrow, as it is certainly at times accomplished where these two organs are wanting, the hypothesis already alluded to is adequate to an explanation of the fact. The surfaces, where the organic extremities of the nerves are spread out, are uniformly of a non-fibrous character, or similar to the gray nervous matter. Vicq-D'Azyr had long ago remarked the analogy between the mucous substance covering the nervous expansion under the skin, and the cortical or gray portion of the brain. Van der Haar asks, if we cannot, or must not, even infer, that there is brain or cerebral substance in the smallest nervous threads: and Fouquet and Bordeu, Carus and Sprengel, compare the gray substance to the mucous tissue of the skin—as has been done by Gall and Spurzheim.

If, then, this mucous tissue be similar to the pulpy and non-fibrous or gray substance of the brain, we can see in it a matrix or origin for the nerves, even admitting M. Serres' eccentric development of the nervous system; in the same way, as we have said, that the converging or white fibres of the brain sprang from the gray or cortical surface of that organ, and met at the median line, to form the commissures already mentioned.

The assertion of our author, that the medullary fasciculi of the pons varolii are developed before the gray matter, and that the peduncles of the pineal gland are constantly formed before the gland itself, is not in either case substantiated. Tiedemann and Gall are opposed to him—the former in reference to the pineal gland, which is not preceded by the peduncles; the latter assuring us, that in the pons varolii and medulla oblongata, the gray matter is abundant before any white or fibrous is perceptible.

M. Serres, in farther proof, as he thinks, of there being no necessary connexion between the gray and the white or fibrous substance, says, that in the mammiferæ, and in birds, the entire layer of cineritious matter may be removed from the spinal marrow without at all affecting the white substance; and that, in the mammiferæ, the portions of gray matter of the corpora striata may likewise be removed, without the fibrous (white) matter presenting any laceration or alteration. We apprehend, that general experience is here opposed to our author. What anatomist is not aware of the great precautions required to preserve the adhesion and direct communication of the third, fourth, fifth, sixth, eighth, &c. pairs? If we remove, ever so delicately, one of the strongest nerves of the spinal marrow, there always remains a small bulb of gray substance adherent to the central extremity of the nerve. In incising the gray substance of the ventricles, or of the *corpora striata*, we see an infinity of small white filaments intimately mixed with the gray substance. The same is found in attempting to remove the external or cortical gray matter from the hemispheres: the blood vessels of the pia mater traverse this substance, and follow the fibre into the subjacent white; so that, when efforts are made to separate the layers, these vessels are necessarily torn.

In regard to the swellings at the part where the nerves are given out from, or, as M. SERRES would say, inserted into the spinal marrow, he is at issue with GALL, in denying that there is any such regular enlargement. Certain, it is, however, that no person prior to GALL and SPURZHEIM, had remarked the enlargements of the spinal marrow, at the parts where the nerves for the upper and lower extremities are given out—an appearance now admitted by anatomists.

In illustration of his opinion of the white being independent of the gray matter, our author gives us the result of his experience in organic alterations of the brain; and mentions his having seen evident cicatrices of the centrum ovale, which had been torn or lacerated in apoplexies. As all the nervous filaments of the brain are accompanied by blood vessels, it is not, GALL thinks, difficult to account for this fact, without admitting M. SERRES' opinions.

The next question discussed by our author, is, how the primitive homogenity of the elements of the encephalon is lost, and how each of them attains to the permanent forms which distinguish each class. To arrive at a satisfactory solution of these hitherto unexplained problems, he follows, step by step, each of the metamorphoses in every class, the better to appreciate the influence which the evolutions of one element exercised upon all the others; and thus traverse the fugitive forms of the encephalon, to obtain an explanation of its permanent ones.

Our limits will only allow us to present some of the results of these investigations. One of the most important of them is, that all the various deformities in organized beings never pass the limits of their class to assume the forms of a *superior* one. Never does a fish rise to the encephalic forms of a reptile, nor the latter attain to that of a bird, or a bird to that of a mammifera.

The parts united by the laws of conjunction, give rise to all the cavities of the encephalon,—the ventricles and the holes, improperly called anus and valva, in the mammiferæ.

The formation of these cavities and holes is, then, under the dependence of the same laws as that of the intestinal cavities; the aorta, the cavities of the heart, and all the foramina and cavities of the osseous system.

Respecting the alleged homogeneousness or unity of the nervous system, and its elements, M. SERRES, with much plausibility, assures us, that this is an invariable fact, attested by the minute examination of the brains of the four classes, and a comparison of their adult with their embryo development.

> "Let us," says he, "go far back in the uterine life of the mammiferæ; you will perceive, at first, the cerebral hemispheres rolled, as in fishes, into two vesicles, separated from each other. After a time, you will see them affect the configuration of the cerebral hemispheres of reptiles; at a later period, again, they will exhibit to you the appearance of those of birds; and, finally, it is only at the epoch of their birth, and sometimes later, that they acquire the permanent forms which the adult presents in the mammiferæ."

To this analytical demonstration, M. SERRES joins the synthetical, by exhibiting, as in the instance of a monkey at birth, (the brain of which has all the parts distinguishing the mammiferous from the other vertebral animals,) the gradual loss of parts in ascending through the period of utero gestation, and the representation thereby of the brains of the three inferior classes.

> "Thus, in rising in the animal scale from fish to the monkies, you see the encephalon gradually become complex, as in descending from

the adult mammiferæ to their different epochs of embryo formation, you will perceive this organ successively decomposed. You will arrive by these two means at the same result—the unity of their formation and composition."

Admitting the correctness of the observations, are we at liberty to draw this inference of the unity of the nervous system in formation and composition? Does not M. Serres sport too much with the word element? And may we not cite his own language, as at variance with his hypothesis? "In ascending," says he, "from the inferior to the superior classes, we see this organ, so simple at first, gradually rise in reptiles and birds to that admirable organization, such as we know it in the mammiferæ, and to that still more admirable structure which it offers in man." The elements being the same, the identity, according to our author, can only be changed by the form and position, each element undergoing in each class new transformation. The totality of the brain is, of course, so modified, as to be no longer recognisable in comparing one class with another.

Though we do not agree with some writers, in regarding as useless all these minute examinations of the brain of the lower animals, or as unproductive the attempts to determine the various parts of which this organ consists, yet we must avow, that to dwell on these points, and to attempt to reduce all the parts of the nervous system to homogeneity, and disregard the obvious differences of form, development, and complexity, and neglect the study of function as associated with certain forms, is, in our opinion, like the labours of the metaphysicians, in explaining causation, or attempting to reduce all the faculties of the mind to mere sensation.

The permanent forms of the brain in the four classes of vertebral animals, are represented by our author to be as follows:

"In *Fishes*, the optic lobes are the predominant element; the cerebral lobes are atrophied; the olfactory lobule is very considerable; the cerebellum is moderately developed.

"In *Reptiles*, the optic lobes lose their influence; the cerebellum is almost extinct; the cerebral hemispheres are comparatively much developed to what they are in fishes; the olfactory lobule is in its turn atrophied.

"In *Birds*, the cerebellum becomes the dominant part; the optic lobules are enfeebled; the cerebral hemispheres are enlarged; the olfactory lobules are almost extinct.

"In *Mammiferæ*, the cerebral hemispheres become in their turn the dominant organs; the cerebellum continues its transversal development; the corpora quadrigemina (optic lobes) are reduced to their minimum of existence; the olfactory lobule undergoes great changes. Much developed in those animals the hemispheres of which are small, it diminishes, and almost entirely disappears, as we rise from the ruminating and carnivorous to the monkey and man."—pp. 80, 81.

What our author calls optic lobes, are the corpora quadrigemina of the brain of mammiferous animals and birds. In fishes and reptiles, they are the two cerebral lobes immediately anterior to the triangular body, corresponding to the cerebellum of the higher classes.

The propriety of the term must be admitted, when we learn, that "the tubercula quadrigemina are developed in all the classes, and in all the families of the same class, in the direct ratio of the volume of the optic nerves and the eyes."* GALL and SPURZHEIM had, many years ago, pointed out the connexion between these bodies and the optic nerves, and traced the origin of the latter to them.

The olfactory lobule is the name given to that prominent part or bulb, in some animals, of the lower portion of the anterior cerebral lobes, to which the olfactory nerve is traced.

"In general, the more a part is developed, the more do we see multiplied the bands, radiations, and plexuses of white matter. The more it is atrophied, the more do we find the white matter diminished, whilst the gray matter augments."

It remains for us to learn the order in which the several parts of the cerebro-spinal axis appear, and their relative proportion to one another.

M. SERRES admits the general correctness of the opinion of SOEMMERING and CUVIER, that the spinal chord and encephalon are developed in an inverse ratio to each other. But he does not think that the entire brain follows this rule; some parts of it being in a direct, others in an inverse ratio, in point of size, to the spinal marrow.

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* Rapport fait a l' Académie de Science, en Mars, 1821, par M. le Baron Cuvier, secretaire perpetuel. This report is included in the work before us.

The spinal chord always precedes the brain in formation. Of this latter, the corpora quadrigemina are the parts first formed. Next appears the cerebellum; the median part of which (*processus vermicularis superior*) is first seen. In the cerebrum, the crura or pedunculi, the optic beds (thalami nerv. optic.,) corpora striata become apparent in the order mentioned: then follows the successive development of the hemispheres, at first the anterior lobes, then the middle and posterior ones. Hence, we see that, however we may admit the eccentric development of the brain, in reference to the formation of each part composing the two halves of it, still, if we regard it as a whole, we find its central parts first formed. Nor can we well understand the eccentric growth of the hemispheres, by such language as the following: "The fibrous (white) bands, after having traversed precedingly the optic bed and corpora striata, are directed forwards, and form the hemispheres by their expansion."—p. 149.

What says Gall and Spurzheim.—"All the fasciculi of the external border of the corpora striata, and the optic beds, are then directed in all senses, that is to say, towards the sides, backwards and upwards, in enlarging themselves always more towards the external borders of the great cavities, (ventricles;) it is there that they appear to form a tissue, whence they are disengaged in many filaments to form duplicatures under the name of convolutions."*—(*Recherches, &c.*)

The corpora quadrigemina and spinal marrow are, according to our author, rigorously developed in a direct ratio to each other, and to the median lobe (*processus vermicularis superior,*) of the cerebellum. But the lobes of this last are in direct proportion in size to that of the pons varolii, or a tuber annulare, as taught by Gall and Spurzheim, though this fact is not mentioned any more than the correspondences to be afterwards noticed, either by M. Serres or Cuvier in his *Rapport, &c.* In reptiles, birds, the mammiferæ, and in man, the development of the optic beds, and the corpora striata, is in direct ratio with that of the cerebral lobes. This fact was also long ago pointed out by Gall and Spurzheim. They did not, indeed, speak of the size of these parts being in an inverse proportion to the corpora quadrigemina, as we are told by M. SERRES. He adds that the corpus callosum is in volume proportionate to the optic beds, *corpora striata*, and the cerebral lobes, a circumstance admitted by GALL and SPURZHEIM.

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* Combe's Essays on Phrenology. Am. Edit. p. 164.

The lobes of the cerebellum and cerebrum being in direct ratio to each other, and of course in an inverse proportion to the spinal marrow, and corpora quadrigemina, rests on our author's authority, by which also we learn that "the nerves of the senses are developed in a direct ratio to the spinal marrow, the median lobe of the cerebellum, the tubercula quadrigemina, the optic lobes, the hippocampus, and the olfactory lobe."

The pons varolii and corpu scallosum, are characteristic of the brain of the mammiferæ, and are not met with in the three inferior classes of animals. The German anatomists, just mentioned, had pointed out, and explained the reason of the absence of the pons in the amphibii, fishes and birds. In the three lower classes of vertebral animals, the tubercula quadrigemina are, according to M. SERRES, hollow, and have an internal ventricle, while the cerebral lobes are solid. In the mammiferæ and, in man, on the contrary, these bodies are solid, and the cerebral lobes hollowed out into large ventricles. These lobes have also convolutions, which are wanting in the three inferior classes.—"The ventricular cavities of the cerebral lobes distinguish exclusively the mammiferæ and man." "The decussation of the pyramidal bands is visible in the human embryo of the eighth week."

"In birds there are at most but two bands, the interlacing of which is evident."

In reptiles and fishes their is no decussation.—Rapport, &c. par CUVIER.—p. 26.

M. SERRES points out the strict dependance of the brain and nervous system generally, on the arterial—the latter of which in the embryo state is pre-existent to the former. The spinal marrow is formed under the influence of the intercostal arteries: the cerebellum by the intermedium of the vertebral ones, and the brain proper or cerebrum by the carotids. Monstrosities of the nervous system are always dependant on prior irregularities, or deficiences of the arteries. Hence the following law:—"The conditions of existence of the various parts of the encephalon in vertebral animals, are rigorously subjected to the conditions of existence of the encephalic sanguiferous system."

When M. SERRES tells us that "we shall find that the faculties may be transported from one element which is governed, to a neighbouring element which becomes governor, we fear that he exposes himself to being misunderstood, or to the charge of advancing an unphilosophical proposition. We can readily admit, that in fishes the optic lobes, and in birds the cerebellum are predominant organs, that the cerebral lobes in the mammiferæ may be atrophied, and the being reduced to the scale of the reptiles, in respect to cerebral function; but in all these cases we find no transfer of faculty. The diminution or atrophy of the cerebral lobes, for example, may be accompanied by a predominance of the corpora quadrigemina or optic lobes, but in no case do we find the functions or faculties of the former, peculiar to the animal in its mere perfect state of organization, evidenced by the latter bodies. Yet this ought to be the case, if M. SERRES' idea of perfect homogeneity of the nervous system, and the transfer of faculties from one element to another, were correct. We fear that our author has been hurried into this sweeping inference in consequence of some curious observations on the nerves—curious, indeed, but not in number or certainty sufficient to justify our framing a law therefrom. In speaking of the nerves of vision, he tell us that

> "The optic nerve may be wanting in certain animals without vision being lost. If the eye exists, if it be placed in communication with the brain by the medium of a nerve, the impression of external objects may be perceived by the animal; the fundamental condition for vision is fulfilled. The secondary conditions only are changed. In fact, if the optic nerve be wanting, if another nerve terminate at the bottom of the globe of the eye, the action of vision will be transmitted along this nerve, as it is in the ordinary state along the optic nerve." —p. 305.

This novel assertion would seem to be substantiated by the evidence which our author adduces in the instances of the mole, the mole-rat of the Cape (*Mus Capensis*,) the fœtid shrew (*sorex araneus*,) the chrysochloris of the Cape (*Talpa Asiatica*,) the zocor (*Mus Aspalax*,) the zemni (*Mus Typhlus*,) in which no optic nerve could be seen, but to the eyes of which a branch of the fifth pair was distributed, and served to give them the limited powers of vision which these animals are admitted to possess. In some of the cetaceous animals, he found the olfactory nerve wanting, but its function was supplied, likewise, by a branch of the fifth pair. (Chap. III. *Du Nerf Trijumeau.*) These observations joined to the opinion of SCARPA, CARUS, JACOBSON and TREVIRANUS, that "the sense of hearing, may, in part, be confided to the fifth pair," induce M. SERRES to yield his assent to the correctness of the general law laid down by CUVIER, "that the difference in the functions of the nerves depends rather on the different organization of the parts to which they are distributed* than on their own nature;" and to admit with DUMERIL, that there may be a transfer of a sense from one nerve to another.

We have said above, that the observations in support of such a law are not of sufficient number or certainty. To corroborate this assertion, we shall cite the direct counter testimony of GALL, who examined the organ of vision of the mole, and found the optic nerve, extremely small indeed, as in all the other species of rats, mice, and smaller mammiferæ. M. BAILLY has since repeated the dissection with similar results, and showed it to CUVIER and GEOFFROY St. HILAIRE. Is it too hasty an inference to suppose inaccuracy of examination in the other animals mentioned, in which the optic nerve is alleged to be wanting?†

We have now concluded the first part of our task, in stating, with all the brevity consistent with the magnitude of the subject, and the necessity of doing him justice in his own words, the ideas and deductions of M. SERRES, as contained in his work on the "Comparative Anatomy of the Brain, in the Four Classes of Vertebral Animals, applied to the Physiology and Pathology of the Nervous System."

To give an opinion conclusively of the value or demerit of the several positions of our author, is what we ought not to attempt, before we array all his minute observations and experiments on the formation of the encephalon and spinal marrow, in the embryos and fœtal state of the varieties in the four classes of vertebral animals, which constitute the first part of his work; and next set forth the similar course of inquiry which he pursued in determining the origin and progressive growth of the nerves, especially those commonly called cerebral, and the great sympathetic. This is the second part of his subject. On a future occasion, we hope to present our readers with many of these details, not less interesting to the physiologist than the anatomist, and we shall endeavour, at the same time, to compare them with the inquiries of the celebrated Tiedemann in the same extensive field.

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* Or, according to M. SERRES, in which they are formed.

† Sur les functions du CERVEAU, &c. par F. I. Gall, T. VI. p. 309.

We shall close our notices of the nervous system at this time by a brief sketch of the observations of Mr. Bell. Were we inclined to cavil, we might object to the title of this gentleman's work. "An exposition of the natural system of the nerves of the human body," as conveying, by strong implication, a censure on all who have preceded him, and leading us to infer that others have only exhibited to us the artificial system of the nerves. But we prefer giving his views and discoveries to carping at his style, or showing an ill-natured pleasure, in pointing out obscurities of expression or diffuseness of language—charges, to which, we must confess, he is somewhat amenable.

The author's reason for the present publication, in place of continuing "to give distinct dissertations, under the auspices of the Royal Society, and afterwards to publish engravings of the nervous system," is, "that a systematic attempt has been made not only to anticipate the future subjects, but to assume whatever merit may belong to these discussions." While we, in common with the members of the profession at large, return our thanks to Mr. Bell, for this course, we cannot, at the same time, but wish that he had not thought it necessary to republish the papers read before the Royal Society, but had rather determined on presenting us in a more clear and succinct manner his views on the nervous system.

However much the Royal Society may exact an adherence to logical induction and scientific experiments, its transactions do not assuredly furnish a model of lucidus ordo or terseness of style.

The present work of Mr. Bell is a small one, and yet it might, without any sacrifice of fact or argument, be considerably reduced in size, had he acted on the plan we just now suggested. Let us, however, be content to cull something from his rich store.

"In the course of these papers, I have shown, says our author, that the great error which has misled anatomists in their conceptions concerning the nerves, has consisted in following, though with some license, the old hypothesis that the nerves receive their influence from the brain, and confer it on remote parts of the body, and that they are endowed with the same powers."—p. 5.

"In the view which I have taken of the nerves of the human body, there are, besides the nerves of vision, smell and hearing, four systems combined into a whole. Nerves entirely different in function extend through the frame—those of sensation, those of voluntary motion, those of respiratory motion, and lastly, nerves, which, from their being deficient in the qualities that distinguish the three others, seem to unite the body into a whole, in the performance of the functions of nutrition, growth, and decay, and whatever is directly necessary to animal existence.

"These nerves are sometimes separate, sometimes bound together, but they do not, in any case, interfere with, or partake of, each other's influence."

Then follows the plate of a section of a nerve consisting of distinct filaments. In examining a nerve, we may find one filament for the purpose of muscular sensation, another for muscular motion, a third for combining the muscles in the act of respiration.

"The key to the system will be found in the simple proposition, that each filament or track of nervous matter has its peculiar endowment, independently of the others which are bound up along with it; and that it continues to have the same endowment through its whole length."

We regret that our author should have thought himself obliged to make a new nomenclature for certain appearances and combinations of nervous matter. They are thus defined:

"Where certain whitish streaks of nervous matter are discoverable in the substance of the brain, we may still use the term *Tractus* as being already an anatomical term.

"Where, in any part, the line of a nerve is merely discoverable by its colour, or the direction of its texture, but when it is raised, and exhibits an external convexity in form of a chord, the term *Column* or *Rod* may be used.

"Where they emerge in distinct threads, *Funiculi* had seemed to me a proper term; and where these *Funiculi* are projected in combination, I use the word *Fascis*. Although we must keep the term *Nerve*, yet it is, as we may say, an abused term."—p. 7.

"If we were successfully to trace a nervous cord, (we shall suppose from a muscle of the fore-arm,) it would be found a simple fila-

> ment, thread or funiculus. We should then trace it into a compound nerve; perhaps the ulnar nerve, which we call compound, because there are in it filaments of motion and filaments of sensation bound together. At the root of the axillary nerve we should trace it into the composition of a *fascis*, where it forms the anterior root of a spinal nerve. Being further traced, it would merge in the anterior column of the spinal marrow, and traced into the case of the brain, it might be followed as a *tractus*—a streak of matter distinguishable from the surrounding substance, until it was seen to disperse and lose itself in the cineritious matter of the cerebrum."—p. 8.

The author has shown in the above paragraph, that one at least of his terms might be dispensed with, and filament retained in place of his *funiculus*.

It is, he informs us, the chief purpose of the papers which are here republished, to explain the cause of the seeming intricacy of the nerves of the face, neck and thorax. Some degree of irregularity, he adds, must arise in the distribution of nerves, from their being compound ones, "but the principal cause is the necessity of arranging and combining a great many muscles in their different offices. Wherever we trace nerves of motion we find that, before entering the muscles, they interchange branches, and form an intricate mass of nerves, or what is termed a plexus." "From the fin of a fish to the arm of a man the plexus increases in complexity in proportion to the variety or extent of motions to be performed in the extremity."

Mr. Bell begins his "description of the system with that of the spinal marrow," which, he tells us, is peculiar to vertebral animals. The relationship between this nervous mass and the vertebræ forming the spine is not simply owing to to the protection afforded to the former by the latter, but consists likewise in the necessary continuation of the thorax into the spine for the motion of respiration, and the necessity of the spinal marrow to that form and distribution of the nervous system which is required for associating and combining the muscles of respiration.

> "Different columns of nervous matter combine to form the spinal marrow. Each lateral portion of the spinal marrow consists of three tracks or columns, one for voluntary motion, one for sensation, and one for the act of respiration. So that the spinal marrow comprehends in all six rods, intimately bound together, but distinct in office; and the capital of this compound column is the *medulla oblongata*.

"These six columns of the spinal marrow are discoverable, on looking to the fore part of that body; but no doubt these grander columns contain within them subdivisions. Thus, if we lift up the medulla spinalis from the cerebellum, and look to it on the back part, we shall see numerous cords, the offices of which will one day be discovered."—p. 11.

This view of the constitution of the spinal marrow, led Mr. Bell to the discovery of the distinct functions performed by the several roots of the spinal nerves. He ascertained that

"The anterior column of each lateral division of the spinal marrow is for motion, the posterior column is for sensation, and the middle one is for respiration. The two former extend up into the brain, and are dispersed or lost in it; for their functions stand related to the sensorium; but the latter stops short in the medulla oblongata, being in function independent of reason, and capable of its office independent of the brain, or when separated from it.

"It is the introduction of the middle column of the three, viz: that for respiration, which constitutes the spinal marrow, as distinct from the long central nerve of the animals without vertebræ, and which is attended with the necessity for that form of the trunk which admits of the respiratory motions.

"*Of the Nerves which arise from the Spinal Marrow—Comparison with the Nerves of the Encephalon.*

"The spinal nerves are perfectly regular in origin and distribution, and are thirty on each side. Each nerve has two distinct series of roots, coming out in packets or fasces; one from the posterior column, and one from the anterior column of the spinal marrow."

The posterior come out with remarkable abruptness from the column, and their funiculi, converging towards the foramen of the sheath of the spinal marrow, form a ganglion. The anterior are formed of funiculi or filaments, which come out with more irregularity than the former mentioned ones.

Contrasted with this symmetrical arrangement is the very great irregularity of the nerves called cerebral or intra cranial.

Mr. Bell wished to ascertain whether the phenomena exhibited, on injuring the separate roots of the spinal nerves, corresponded with what was suggested by anatomy. His predominant feelings of humanity made him hesitate to experiment on a living animal, and, therefore, rendering a rabbit insensible by a blow behind the ear, he exposed the spinal marrow. On irritating the posterior roots of the nerve, no consequent motion could be perceived in any part of the muscular frame, but on irritating the anterior roots of the nerve, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed.*

The next step of inquiry for our author, 'was distinctly indicated.' If he pursued the track of the anterior column of the spinal marrow up into the brain, would he find the nerves which arise from it, to be muscular nerves.

In tracing the column upon the corpus pyramidale, he finds the origin of the ninth pair, which

> "Has only one series of roots corresponding with the anterior roots of the spinal nerves, and that these roots come from the *tractus motorius*, and we cannot forget that this nerve is entirely devoted to the muscles of the tongue, that it is the motor of the tongue. Following up the corpus pyramidale, we find issuing from it the sixth nerve, a muscular nerve of the eye. Still following up the *tractus motorius* through the *pons varolii*, we come to the roots of the third nerve, the motor nerve of the eye. Thus all the nerves arising in one line, from the Crus Cerebri to the Cauda Equina, are muscular nerves."—pp. 17, 18.

"The next matter of inquiry was to ascertain how far the fifth nerve of the encephalon corresponded with the spinal nerves."

> "Observing that there was a portion of the fifth nerve, which did not enter the ganglion of that nerve, and being assured of this fact by the concurring testimony of anatomists, I conceived that the fifth nerve was, in fact, the uppermost nerve of the spine, that is to say, the uppermost or most anterior of those nerves, which order the motion and bestow sensibility, in its extended sense, on the frame of the body."

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* Mr. Bell, in more than one part of his work, complains of Magendie's apparent desire to deprive him of the honour of this discovery, and hints at the cruelty of performing so many experiments on living animals, to determine that to which he was led by anatomical views. The facts seem to be, that Mr. Bell, as far back as 1809 or 1810, showed that the posterior roots of the spinal nerves might be cut without impeding motion; but this initial idea was not followed up, until Magendie conclusively showed that the anterior nerves of the spinal marrow are nerves of motion, and the posterior ones are destined for sensation. A little less confidence in the all illuminating power of anatomy, or not quite such shrinking sensibility, on the part of Mr. Bell, might have carried him to the entire establishment of his present positions without the risk of interference of his vivisecting rival.

It is to the head what the spinal nerves are to the other parts of the body.

The symmetrical or spinal nerves having had their arrangement and function displayed, our author proceeds to the consideration of the remaining or *irregular nerves*.

"These are distinguished by a single fasciculus, or single root; that is, a root from one column. These are *simple* in their origin, *irregular* in their distribution, and deficient in that symmetry which characterizes the first class. They are superadded to the original class, and correspond to the number and complication of the superadded organs. Of these, there are the third, fourth, and sixth, to the eye; the seventh to the face; the ninth to the tongue; the *Glosso-Pharyngeal* to the pharynx; the *Nervus Vagus* to the larynx, heart, lungs, and stomach; the *Phrenic* to the diaphragm; the *Spinal Accessory* to the muscles of the shoulder; the *External Respiratory* to the outside of the chest."—p. 23.

These nerves, our author conceives to be agents of distinct powers, and to combine the muscles in subserviency to different functions.

He very properly, we think, in his first paper to the Royal Society, considers as contributing to respiration, the muscles of the face, neck, and shoulders, as well as those of the thorax and abdomen,—all which are alternately or conjointly called into play, in the common actions of coughing, sneezing, speaking, and singing.

The nerves of the face, are, first, the *trigeminus*, or the fifth pair, and that familiarly called the *portio dura* of the seventh; "but which, in this paper, will be called *the respiratory nerve of the face*."

The fifth is the nerve of taste, and of the salivary glands, of the muscles of the jaw, and of common sensibility.

The portio dura, or respiratory nerve of the face, rising from the *medulla oblongata*, close to the *nodus cerebri*, and exactly where the *crus cerebelli* joins the *medulla oblongata*, passes into the internal auditory foramen, and is here embraced by the *portio mollis;* from which, however, it separates, and is received into an appropriate canal of the temporal bone. This nerve has, by means of the Vidian nerve and *chorda tympani*, access to the muscles of the back of the palate and the *velum palati:* emerging through the stylo-mastoid foramen, it divides into many branches,—one going to the muscles of the outward ear, another to the muscles of the throat. The principal nerve then passes through the parotid gland, and comes upon the face—spreading upwards to the temple, and downwards upon the side of the neck, forming a superficial plexus. The chief branches, however, go forward to the muscles of the forehead and eyelids; a branch called the superior facial is sent to the muscles of the cheek, and side of the mouth; while an inferior facial branch is given to the angle of the mouth, and the muscles which concentrate there.

By experiments on animals, it was conclusively ascertained, that a section of the branches of the fifth pair was followed by a loss of feeling in the part, without motion being impaired; while a section of the portio dura was attended by a loss of motion in the muscles of the face, including those of the mouth and nose, without sensation being injured.

> "On cutting the respiratory nerve on one side of the face of a monkey, the very peculiar activity of his features on that side ceased altogether. The timid motions of his eyelids and eyebrows were lost, and he could not wink on that side; and his lips were drawn to the other side, like a paralytic drunkard, whenever he showed his teeth in rage."—p. 52.

Corroborative facts to this end are met with in the human face, when the trunk of the respiratory nerve has been injured by wounds, or tumours of the parotid gland. The inference to the surgeon, in performing operations on the face, is highly important. Nor can the physician fail to be aided in his diagnosis of paralysis, and determining whether it proceeds from the brain, or is a partial affection of the muscles of the face, "when, from a less alarming cause, they have lost the controlling influence of the respiratory nerve."

Our author gives cases of disease, in which this nerve has suffered, and been attended with the above enumerated symptoms.

> "Thus it appears, that the portio dura of the seventh nerve is the principal muscular nerve of the face; that it supplies the muscles of the cheek, the lips, the nostrils, and the eyelids; that is, that it is the nerve which orders all those actions which are in the remotest connexion with the act of respiration."

The next paper is a continuation of the subject, by tracing the nerves which influence the motions of the trunk of the body, in respiration.

The offices of the thorax are first given; then the origin of the respiratory nerves; and the muscles of the trunk, which are brought in aid of the common respiratory muscles. These are the mastoid muscle, the trapezius, the serratus magnus, and the diaphragm. "The nerves which give rise to the extraordinary intricacy of this system on the side of the neck, are the spinal accessory nerve, the phrenic nerve, and the external thoracic nerve." The second of these, or spinal accessory, is called the superior respiratory nerve of the trunk, and is distributed, after giving off some minor branches to the mastoid and trapezius muscles. Even in complete hemiplegia, these muscles will act in respiration, in virtue of the respiratory nerve distributed to them.

The experiments performed by dividing the spinal marrow between the vertebræ of the back and those of the neck, and yet respiration still continuing with the diaphragm; and by dividing the phrenic nerve, the pneumo-gastric, or par vagum, and its recurrent and laryngeal branches, furnish us in our author's paper with no novel inferences.

The relations of the subject are presented by him, under the heads of pathology and expression. We must refer our readers curious for such information, to the work itself, which ought to be perused by all persons any way interested in the progress of anatomical and physiological science.

The two concluding papers of this volume, are "On the Motions of the Eye, in illustration of the uses of the Muscles and Nerves of the Orbit." In these the writer proposes to show, that

> "We must distinguish the motions of the eye according to their objects or uses, whether for the direct purpose of vision, or for the preservation of the organ; that the eye undergoes a revolving motion not hitherto noticed; that it is subject to a state of rest and activity; and that the different conditions of the retina are accompanied by appropriate conditions of the surrounding muscles; that these muscles are distinguished into two natural classes; and that in sleep, faintness, and insensibility, the eye-ball is given up to the one, and in watchfulness, and the full exercise of the organ, it is given up to the influence of the other class of muscles: and, finally, that the consideration of these natural conditions of the eye, explains its changes, as symptomatic of disease, or as expressive of passion."

Mr. Bell concludes, by offering "a few words in favour of anatomy, as better adapted for discovery than experiment." By which, we presume, he means us to understand, that anatomy is more favourable than experiment, for leading us to make discoveries.

"The whole history of medical literature proves, that no solid or permanent advantage is to be gained, either to medical or general science, by physiological experiments, unconnected with anatomy. To disregard the anatomy of the nervous system, or to take it in the gross; to make a new science *of life*, and, influenced by a false analogy, to call it a fluid; to attempt to direct it along a cord or wire, is to transgress all the rules of philosophical inquiry, and must be attended with the rapid decline of anatomical studies. They will be considered as imposing restraints on genius, or be rejected as useless; and with them, pathology, and all that is most necessary to medical science, will fall into disuse."

In assenting to the general justness of these remarks, we may, also, be allowed to hope confidently that Mr. Bell will not fail to set forth his favourite studies in the same strong and agreeable relief, on future occasions, as he has done in the work before us.

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ARTICLE XII.—*The Lectures of* Sir ASTLEY COOPER, Bart. F. R. S., *Surgeon to the King, &c. &c., on the Principles and Practice of Surgery. With additional Notes and Cases, by* FREDERICK TYRREL, Esq., *Surgeon to St. Thomas' Hospital, and to the London Ophthalmic Infirmary. Vol. I. pp.* 351. *8vo, London*, 1824.*

THE present is the first of a series of volumes, purporting to be a faithful report of the Lectures of the distinguished surgeon of the British metropolis, by his former pupil and friend, Mr. TYRREL. That the pretensions of the reporter are just, and that the profession should regard the present publication, written in the name of Sir A. COOPER, as containing a faithful account of his opinions, theoretical and practical, is fully confirmed by the subjoined note:

"DEAR SIR,—I have looked over the manuscript of my Lectures on surgery. It contains a faithful account of the principles of surgery, which, for forty years, I have been endeavouring to learn; and of the practice, which, for thirty-two years, I have been in the habit of teaching, in that school which is proud to rank among its Lecturers on Surgery, the names of CHESELDEN, SHARP, WARNER, ELSE, and last, although not least, of my most able and judicious preceptor and predecessor, Mr. CLINE. I am your's, very truly.

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* This volume has been re-published at Boston, and we are happy to learn that the second volume has been received, and is now in press.

"ASTLEY COOPER."

Such being the circumstances of the case, we must congratulate the profession on this valuable addition to the standard works on surgery. For many years has the author maintained a very prominent station among scientific surgeons; and his very extensive practice, private as well as public, has enabled him to examine surgical diseases under almost every aspect, and to test the numerous opinions, and modes of treatment, which have, at various times, been recommended. His own improvements and contributions have, also, been numerous, as is well known to the public, especially through the medium of his essays, in conjunction with Mr. TRAVERS, and his elaborate work on Dislocations and Fractures.

Hence, the *authority* of Sir ASTLEY has become of importance; and to know *his* opinion on points, however minute, which are still undecided, not only excites a laudable curiosity, but promises to be essentially useful to the successful and scientific pursuit of our profession.

The period has long since passed, when authority alone gave importance to opinions. The Medical Profession, in the United States especially, has been for many years truly independent. Its members have observed and thought for themselves. The principle has been adopted, that great names should merely insure a candid and patient investigation for their productions; but that these should eventually be received to no greater extent than rigid experience and unbiassed reason may determine. This principle is applicable to the work before us, in which there are several inaccuracies and faults, which a critical reviewer would be bound to notice; for us, however, it will be generally sufficient to introduce the subject to the reader's attention, and but rarely to animadvert on blemishes in a production truly excellent. It should, however, be remembered, that these are lectures for *students*, and not a systematic work composed for the profession. Such a production is still a great desideratum in English and American Surgery, which presents no competition to the scientific, accurate, and extensive work of Baron BOYER.

This volume contains twelve lectures; the two first treat of Irritation and Inflammation; and as these form the foundation of all just principles in surgical science, it will be necessary to state our author's opinions somewhat in detail: we shall thus be prepared for following him through the rest of his labours with more advantage.

Our author introduces the subject of Irritation, by some general observations on the effect of stimuli on the human body, in health and disease, advocating the commonly received doctrines of sympathy. This property, the essential nature of which is unknown, is "natural," as exemplified in changes which are observable in the mammæ during gestation, or it is "diseased," following injuries or diseases; in the one case becoming the cause of *restoration*, in the other, of *destruction*. This state of the body is called *Irritation*, which is defined "*an altered action excited in the body by an unnatural impression*;" unnatural in kind, or in degree.

Irritation, existing in any part, sometimes produces only diseased *sensation;* thus, the irritation of a diseased hip causes a "sympathetic pain" in the knee: but very often "*morbid actions* are also excited in other parts, which are near and intimately associated, or in distant parts;" thus, inflammation of the testicle is produced by irritation of the urethra; retention of urine has often resulted from tying the femoral artery for popliteal aneurism.

Irritation is generally *propagated* through the medium of the *nerves*, either cerebral or ganglionic. The *course* of irritation is, in some instances, from the irritated part to the sentient extremity of the nerve; sometimes, from the point affected to the origin of the nerve; and occasionally, the sympathetic communication is through the brain. Our author gives one case from a Mr. TOULMIN, of this last variety, in which a hemiplegia resulted from the irritation of a diseased tooth, and was cured in a short time by the removal of the cause. The reader will find another interesting and well marked case of this character in HENNEN's Military Surgery.

Irritation of the nerves of the grand sympathetic, chiefly affects the stomach, and but slightly the other system of nerves. Thus, obstructions of the [illegible] from any cause, will excite nausea and vomiting, with a remarkable absence of cerebral sympathy; even in fatal cases, "patients are generally quite collected, until nearly the last moments of their existence." This is an important observation, as the practitioner has often been deceived by the natural condition of the mind, and of the cerebral functions generally, little suspecting the imminent danger of his patient, until too late to afford assistance.

Irritation is sometimes merely "local," as is seen in a diseased tooth causing abscess and ulceration of the gums. "General irritation" is manifested by the convulsions, paralysis, and fever, resulting from dentition, &c. "Slight injury to the stomach, although it does not occasion any sensible organic change, will sometimes destroy life." On examination after death, no mark of violence can be discovered. In a note it is asked, Does the blow affect the semilunar ganglion?

It might have been observed by our author, that accidents of this kind are not peculiar to the stomach. A blow over any of the vital organs will often produce death, without any solution of continuity, or disorganization of the part. General death ensues from the blow paralysing an organ essential to animal life. If the part injured be not essential to the existence of the animal, recovery is practicable. Thus, Boyer quotes* from De La Motte, the case of a boy, whose right hand remained for ten days in a state of asphyxia, in which the heat, sensibility, motion, the pulsation of the arteries, indeed, all the phenomena of life, ceased, in consequence of a blow on the outside of the fore-arm. It gradually recovered its powers. Hence, we may conclude, that even when rupture does take place, the great danger of contusions results from this irritation, or impression on the nervous system, and not from the solution of continuity.†

Constitutional irritation is aggravated by a variety of causes; as, the importance of the injured part, the extent and kind of the injury, nature of the tissue or organ; and especially, by the state of the patient's constitution; as, depending on age, habits, climate, &c. Thus, convulsions and death have followed surgical operations on infants: hence, these operations should be postponed, if possible, until they are two years old, when their restorative powers are stronger. In old age, there is little irritability; but, at the same time, the powers of restoration are diminished. Many of these irritable constitutions suffer immensely from even trifling local irritation; a small splinter in the foot often induces convulsions or tetanus; a moderate local inflammation will cause severe irritative fever and death.

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* Tome i. p. 105.

† Vide Observations on concussion and compression of the brain.

In illustrating these valuable observations, our author notices the bad consequences resulting from wounds received in dissecting animal bodies, which, he observes, may possibly arise, in some cases, from the absorption of morbid matter, but, very generally, from an irritable state of the constitution, acquired by a long attendance in hospitals or anatomical rooms. Hence students seldom suffer until late in the season. Mr. TYRREL adds his testimony also in favour of irritation, denying the absorption of morbid matters.

Irritation destroys life in one of three ways. 1st, by its *continuance*, wearing out the system; in these cases usually inducing the symptoms of irritative or hectic fever. 2nd, When more severe, by *occasioning excess of action*, and 3d, when most severe, by the *great shock on the nervous system*, causing death, without reaction. Dissection affords little explanation of the cause of death in such cases; sometimes, in death from burns, the vessels of the brain or spinal marrow are found turgid, when from dentition, a serous effusion is occasionly seen. "In an adult, dying from irritation, we have several times seen patches of cartilage and bone on the pia mater of the spinal marrow."

The *treatment* of irritation is similar to that of inflammation. The cause is to be removed or moderated; where a local disease is either promoted or aggravated by the state of the constitution, "the remedies must be in great part constitutional, for, as the general health is improved, so will the local affection disappear."

The excess of irritation is to be subdued, 1st, by restoring the secretions of the different organs, and 2nd, by allaying the excitement of the nervous system. "The combination of calomel, antimony and opium, is one of the best medicines for allaying irritation."

The abstraction of blood is also recommended as lessening the momentum of the circulation, and as preventing congestion in any vital organ, "but it must be taken away *with the greatest care*, not to diminish too much the powers of the constitution."

The lecture closes with some excellent and pertinent remarks on the influence of the mind on the healthy and diseased operations of the system, and in facilitating or retarding our remedial measures. Some striking examples of the dangerous, and even fatal effects of fear are presented: in one, a child being put into a dark cellar for some trifling offence, was dreadfully frightened—could not be pacified the remainder of the day—on the succeeding day, had fever—soon followed by delirium—frequently muttering "do not put me into the cellar," and in a week she died.

In another child, entire deafness was caused by being terrified by her school-fellows.

This concludes our author's very valuable remarks on irritation, which has, hitherto, been almost entirely neglected by surgical writers. The importance of the subject may justify the remark, that the distinction between local irritation and inflammation, and between general irritation and fever, has not been drawn with sufficient accuracy.

Irritation is the impression made on the nervous system, and is, therefore, the first effect of an injurious cause. *Inflammation* is secondary, it results from the irritation, and not directly from the stimulus, for it involves not only the nervous, but also the circulating system, agreeably to the axiom "ubi irritatio, ibi affluxus." But, as our author has remarked, irritation *may* exist, and may even destroy life without any inflammation; this is his "irritation of sensation," and is exemplified by the pain at the knee in morbus coxarius; by the asphyxia of a part, from a blow, &c. &c.

What is thus true of a part, is true of the whole system. General irritation is often seen without fever, as in convulsions from dentition; so also, death is often induced by a powerful shock or impression made on the nervous system—there is no re-action. But re-action and fever often ensue; being, evidently, always secondary, the first impression being made on the nervous system, the disturbance of which, involves the arterial system: thus, worms in the alimentary canal, induce the symptoms of irritative fever.

That our author has erred, in not drawing this practical distinction with sufficient perspicuity, appears more evident when noticing the treatment of irritation. His first indication is to restore suppressed secretions, but there is little or no suppression before fever has ensued; hence, he gives no directions, even under his second indication, of allaying the excitement of the nervous system, as to the proper practice to be adopted *immediately* after the reception of a severe injury, where, to borrow an illustration from Mr. J. Bell, the system is rapidly sinking as from a powerful and deadly poison. In such cases, the combination of calomel and opium—bleeding—the attempt to act on the secretions will be in vain, or even detrimental. The prompt exhibition of stimuli internally and externally can alone do good—can alone enable the system to resist the shock and to produce that degree of re-action, so much insisted on by our author, as essential to recovery.

The second lecture treats of *inflammation* as "the means by which local injuries are repaired, and it may be therefore considered as the *restorative principle.*"

The usual explanation is given of the four primary symptoms of phlegmonous inflammation, with the exception of the increased sensibility of the inflamed part, "which arises from the extension of the nerves by the greater quantity of blood determined to them:" thus maintaining, that the nervous excitement is the effect, and not the cause of the afflux of blood, which last is the commonly received opinion. Our author also observes, that the *irritability* of a part is exceedingly augmented by inflammation; hence, the chief danger of cutting into inflamed parts, for not only is severe pain inflicted, but the inflammation is greatly aggravated, and the restorative process rendered more difficult.

He describes only four terminations of inflammation, that, by effusion of serum being omitted. The 1st, is by adhesion from the effusion of fibrin (not the albumen) of the blood: 2nd, by suppuration; 3d, by absorption or ulceration; and 4th, by gangrene. "From *excessive action*, the arteries are first enfeebled, and then, their vitality is destroyed; the blood coagulates in them, and gangrene of the part is produced."

The *constitutional effects* are the different symptoms of irritation already noticed.

The *various modifications* of inflammation by structure, are noticed at some length; we can record but few of the observations here made.

The extensive redness of the skin, often seen in compound fractures, should not be confounded with erysipelas; it arises from a continuous inflammation of the *fascia*, and is an unfavourable symptom. Pus is sometimes formed, and when collected under these membranes, causes severe irritative fever.

Tendons rarely inflame, but are sometimes extensively concerned, and when suppuration occurs, the tendon sloughs more extensively than the surrounding soft parts. "Punctured wounds of tendons are apt to produce tetanus, more than wounds of other parts of the body." This, we should say, is very doubtful.

In *Arteries*, an extensive inflammation of the internal tunic rarely occurs, but sometimes by the application of a ligature, in a bad constitution, it is excited, and may extend even to the heart. In these cases there is much irritation "and, what I have generally observed in inflammation of the blood-vessels, pain in bending the different joints, from its changing the position of the vessels."

"I have seen several patients die from inflammation of the *Veins* after venæ-section, and in the greater number bleeding was required for dyspnœa. When, on examination, the inner coats of the vein were found *adherent*, and I have seen suppuration in the vein." The fact of adhesion of the inner and opposing surfaces of veins, is here maintained by our author, in consonance with general opinion, although in opposition to Mr. Travers, who, from experiments, would attribute the obliteration of veins to the thickening and contraction of their parietes, and not to adhesion of their internal surfaces. The seat of inflammation in veins, says our author, is more below the ligature than above it, and seems to be caused "by the excessive distension from the interruption to the return of venous blood."

Wounds of the *Nerves*, "although dreadfully painful at the moment, are followed by little irritation:" portions of the largest nerves may be extirpated with little local or general disturbance. They are but rarely inflamed, but when inflammation occurs, "the pain is excessive, with a tingling feel in the parts to which the nerve is distributed with great tenderness of the skin but no redness."

The inflammatory action of *synovial membranes* is readily induced, and has a great tendency to *suppuration*.

"*Cartilages* in joints ulcerate from inflammation, and often become entirely destroyed."

Bones inflame, adhere, suppurate and form abcesses, ulcerate, become gangrenous, and slough or exfoliate, like the soft parts, and often new bone is formed to supply the place of that which has been separated.

Inflammation is healthy or diseased; acute or chronic; common or specific. "In specific inflammation the vessels have a different action to the healthy, and thus the fluids and solids which they produce have not the usual characters."

"There is another kind of inflammation which I would call the *irritable;* in this disorder the blood-vessels are much less affected than the nerves." Severe pain and irritation, with little or no diseased appearance, characterizes the complaint. It is often met with in the eyes, bladder, testicles and rectum, but most frequently in the breasts of young women, and is accompanied with constitutional disturbance. The proper remedies are those for irritation, with particular attention to the organ concerned. In females with diseased breasts, the uterine functions should receive attention; and in three males "I have been obliged to remove the testicle for this disease."

On the still controverted subject of the *proximate cause* of inflammation, or more correctly, on the *condition of the vital tissues* in an inflamed part, Sir Astley does not commit himself very decidedly. We shall quote his own words, after he has described the appearances produced by irritating the tail of a tadpole, as seen through a microscope, which accord with the observations of Dr. Philip.

"With respect to man, we observe, that if a drop of nitric acid be applied on any part of the body, in three or four minutes a rush of blood takes place into the part, and it becomes red. In the parts near to that inflamed, a strong feeling of pulsation is produced, showing that the action of the surrounding vessels is increased, and the heart, sympathising with it, has the velocity and force of its action augmented."

"The vessels of the inflamed part, then, are found to be dilated, but the arteries feeding the inflamed part are also dilated; so that, if a limb be injected, in which there has been any considerable extent of inflammation, the principal vessels, as well as their branches, have their diameters increased."

"Inflammation is, therefore, a dilated state of the vessels of the part, an increased action of those in the surrounding parts, and the heart sympathising with the part, determines a larger quantity of blood to the dilated vessels."

In this statement our author evades the disputed point, whether the capillary vessels are in a state of debility or of excitement during the inflammatory turgescence, although he here evidently inclines to the opinions of Vacca, Allen, Philip, Hastings, &c. that there is a debilitated state of the capillaries with increased action of the supplying vessels. Should we, however, gather his opinion from any other portion of the volume, he must be ranked as an advocate for increased action of the vessels in inflammation. For example, he speaks of gangrene, as being caused by "the excessive action of the vessels," of leeches relieving inflammation, "by abstracting blood from the vessels of *the part*, they (the leeches) lessen their diameters, and consequently diminish their distention and *force of action*." "In the acute inflammation, the object is to *decrease vascular action*, but in the chronic, to strengthen and change it." This inconsistency is, by no means, peculiar to our author.

We can notice but a few of the many valuable remarks in the third lecture on the *treatment of inflammation*.

General bleeding operates principally "by *producing a diminution of nervous power*," whence debility, syncope: it also operates in a secondary manner, by diminishing the momentum of the circulation. A *hard* pulse, however small it may be, is an indication for bleeding; a *quick* pulse denotes irritability, and unless combined with hardness, does not require the lancet. Sizy blood is not to be depended on; our author has seen this appearance of the blood in scurvy. A large proportion of serum contra indicates venæ-section. The following remarks deserve to be seriously remembered:—

> "When you are required to take charge of patients, suffering from an injury, which demands a length of time for its restoration, you must be exceedingly careful how you take away blood from the system generally, but must, in preference, adopt local bleeding; for if, as I have observed, you adopt a system of free depletion, nature will not be equal to the restoration of the injured parts, and the most disastrous consequences follow the indiscriminate employment of blood-letting. *There is not a greater error than this, in the practice of Surgery.*"

Mr. TYRREL gives a case of a stout man having a simple fracture of the tibia, with considerable contusion, who died from this cause. "When inflammation occurs in old people, you must bleed with the greatest caution, as effusion is apt to ensue."

The second mode of relieving inflammation is by restoring the secretions of the part, and of the system, which are almost universally diminished or suppressed.

Thus *Purgatives*, by restoring the secretions of the whole mucous surface of the alimentary canal, (nearly equal to one thousand square inches) afford relief by direct evacuation; they are useful, also, by removing fœculent accumulations, and by irritating the intestines—"blood is thus determined to them and abstracted from the part inflamed; upon the acknowledged princiciple, that *two increased actions* proceed with difficulty in the body at the same time." These good effects are greatly increased when they have an influence also on the biliary secretion.

Diaphoretics, including the warm bath, also act as direct depletants and as revulsives.

In the treatment of *Chronic Inflammation*,

> "The remedies employed must have a slow and gradual action on the secretions. You cannot take this disease by storm; and if your medicines act with violence, you will produce mischief, instead of affording relief. The principle on which this disease is founded, is the arrest of some of the secretions; and its successful treatment depends upon their restoration."

For these purposes, our author very strongly recommends calomel and opium, and, also, corrosive sublimate in very small doses; "always keeping in mind, that mercury, given to excess, will tend to increase, rather than destroy constitutional irritation."

When attending to the local treatment of inflammation, the nature of this process is to be borne in mind—"that the vessels are in a dilated state, and that those surrounding it have an increased action."

> "Cold, applied generally and gradually for a length of time, to a healthy person, diminishes the power of the nervous system, and has the effect of lessening arterial action, both in force and frequency. When cold is applied locally to an inflamed part, it robs it of its heat, lessens its nervous energy, and diminishes the diameter of the vessels."

Evaporating lotions are useful, by the degree of cold which is produced by this process; and hence, should be so applied that evaporation may go on with facility. "Do not put ice itself to an inflamed part; it irritates, and is apt to produce gangrene."

This assertion, that ice produces irritation, seems rather inconsistent with the previous explanation of the modus operandi of cold, as diminishing nervous energy; but our author meets the difficulty, by observing, that exposure to great cold causes severe *pain;* and hence, is a source of irritation. He founds this explanation on the following experiment: "I plunged my bare arm up to the shoulder into snow; immediately before the immersion the pulse was at 80, and it quickly rose to 109: the result was contrary to what I expected, and I repeated the experiment; the pulse sometimes did not rise so high, but was small and hard."

On this very interesting and disputed point, which demands a very intimate acquaintance with all the laws of life for its profitable investigation, much might be said in opposition to the supposed *irritating* powers of cold, in any degree of intensity. But as our author holds fast to experience, and recommends the local application of *ice* as of signal service in inflammations of the brain and other internal parts, notwithstanding his fears of irritation, we shall, for the present, content ourselves with observing, that the facts adduced in the work under review, demonstrate the almost uniform effects of cold in diminishing the irritability of the ganglionic system of nerves at least, and of course, the action of the heart, arteries, and capillaries, and other systems under the influence of the "organic life" of BICHAT. Hence, its advantage in inflammation, and in all other states of increased excitement.

Heat, with moisture, is also useful in inflammatory affections. "The application of heat alone would be injurious, by increasing action; but when combined with moisture, it is beneficial, by producing relaxation, opening the cutaneous pores, and giving rise to perspiration." Thus, our author well resolves the paradox, that heat and cold are both useful in inflammations, but on very different principles; the former by promoting secretions; the latter, "by diminishing nervous irritability, and by lessening the diameter of the vessels." He also observes, that medicated fomentations are not preferable to mere warm water, unless the integuments be broken; but Mr. TYRREL sagaciously inquires, "If the iris can be affected by the application of belladonna to the eyebrow; or if preparations of lead are beneficial in inflammation, when the surface is not broken, why may not anodynes allay irritation?"

After some remarks on the use of leeches and scarifications, he describes the local treatment of chronic inflammation. "In the acute inflammation, the object is to decrease vascular action; but in the chronic, we endeavour to strengthen and change it," by astringent and stimulating lotions. "When you apply stimulating lotions, you should cover the parts with oil silk, to prevent evaporation, by which cold would be produced, and your intention frustrated. The object being to excite heat and action, the prevention of evaporation materially assists."

The next mode of treatment is by counter-irritation. Setons and issues, (and it may be added, blisters,) often produce too much irritation, and also irritative fever; thus increasing the original malady they were intended to subdue. "*Counter-irritants should never disturb the constitution.*"

Lecture IV. treats of the *adhesive inflammation*. The effects of inflammation on the blood are noted; and the Hunterian explanation of the buffy coat, by the precipitation of the red globules during a slow coagulation, is adopted: an explanation which to us has always appeared very unsatisfactory; for a perpendicular section of the coagulum presents, not a gradual change of colour from the surface to the bottom, but a sudden transition from the buffy colour of the coat to the crimson colour of the body of the coagulated mass.

Our author points out the usual consequences of the adhesive inflammation, in the cellular and serous tissues, and exemplifies "nature's benevolent and wise ordinance," in rendering the serous membranes very liable to adhesion, while the mucous membranes, lining the outlets of the body, are almost incapable of this process.

The valuable observations which succeed, on the time required for adhesion; on the organization of the fibrin; on the essential importance of adhesive inflammation, in the simplest as well as in the most severe accidents and operations; and the numerous illustrations of its value, in preventing or arresting suppurative inflammation; in compound fractures; in the Cæsarian operation; in operations for cataract, for strangulated hernia, and for aneurism;

in amputations, &c. could not be given without a transcript of the whole lecture. They should, however, be familiar to every student and practitioner of surgery. We shall notice our author's opinion on one or two points, which are still "sub judice," or, at least, not generally adopted.

Speaking of ligatures to arteries, he observes, that the proposed plan of removing both ends of the ligature close to the vessel, "has been already abandoned." One end only should be removed, even when *animal* ligatures are employed; for here, also, when both portions have been cut away, with but one exception, "I have not been able to prevent suppuration." In these cases, Dr Physick, (to whom the credit of priority in the use of animal substances, is due,) would still recommend that the knot only of the ligature should be left, while the immediate adhesion of the wound over the ligature is prevented, by the insertion of a small strip of linen, so that an outlet is preserved for the remains of the ligature, which will often be discharged in the course of twenty-four hours. By this ingenious contrivance, he secures the many great advantages of employing a *destructible* ligature, without any inconvenience resulting. It may be proper to add, that no bad consequences have yet come to our knowledge, from the use of the animal ligature.

In dressing wounds, all coagula of blood should be carefully removed, when immediate union is desired: "blood is not the means, but the prevention of union, in such cases;" "all clots of blood will only operate as extraneous bodies, and keep up irritation." "There is one instance in which blood favours the process of adhesion, and that is, in the application of a ligature to a blood vessel; for a clot of blood forms in the artery, and is afterwards *glued to its interior by the adhesive inflammation.*"

We give this quotation with some surprise, as directly contrary to the previous assertion, and not supported, as far as we can perceive, by the experiments of his friend, Dr. Jones; on which, his opinions, as well as those of the profession in general, are founded.

We quote another passage severely condemning a practice which we may observe every day enforced.

"It is curious to see the difference between the mode of dressing stumps now, and that adopted a few years ago. The old practice was, after the adhesive plaster had been applied, to put some lint, then plaster again, after that tow, and lastly, over the whole, a cap of flannel. If a surgeon were to do this now, he would be laughed out of the operating theatre; and very deservedly, *because he would prevent the success of the adhesive process by undue heat in the limb.* All that is necessary to do, is to use three strips of plaster over the wound, and one circular piece; if the weather be hot, to apply spirit of wine, and water; and if cool, to keep the stump quiet. The object is *to prevent the inflammation passing beyond the adhesive stage, for then suppuration must be the result.*"

The principle of adhesion has been successfully applied "for the reparation of some portions which have been destroyed by disease or designedly mutilated," as in the formation of artificial noses, as practised by Taliacotius; and also, in the East Indies, Mr. Carpue has repeated this operation with success. Mr. Lynn has made a new lip from the skin beneath the chin. Mr. Cooper himself, and Mr. Earle have made new portions of urethra from the skin of the scrotum.

Even small portions of the soft parts, which have been entirely separated from the body, have been again united by the adhesive inflammation.

Lecture V. embraces the *suppurative stage of inflammation.* After some remarks on the local and constitutional symptoms of suppuration, our author again alludes to the proneness of mucous surfaces to form pus before the occurrence of the adhesive inflammation; "a slight degree of inflammation, producing suppuration, or a higher degree of it, adhesion."

The *synovial* membranes, "on account of their mucous structure," manifest the same peculiarity. "The same observations apply to wounds of the thecæ, which are very apt to suppurate."

Pus is a *secretion* from the blood in consequence of inflammation. "It is composed of serum, fibrin and globules; and if I were to hazard a theory on this subject, I should say, that pus was composed of the constituent parts of the blood, slightly changed in their character by inflammation."

"In health it has no putrefactive smell, but slight changes in the constitution will sometimes render it excessively putrid," and of course, irritating. This fact has not been sufficiently attended to in practice; for thus abscesses, apparently trifling, produce often the most serious, and even fatal effects on the system, which may be prevented by a timely opening and evacuation of the cyst.

"The nature also of the matter becomes changed by local inflammation;" mild unirritating pus, becoming acrid, causing excoriation, &c. from changes in the character of the local action.

After noticing the uses of pus, our author gives his testimony as to the danger of arresting chronic suppurations, which suppression will often be followed by inflammation of the lungs, apoplectic seizures, &c. Some cases are given; and he observes—"I can call to mind eight cases of inflammation of the brain, produced by suppression of suppuration from the ear." These dangers may usually be prevented, by keeping up the secretions of the body generally, especially, those of the liver and intestines, which will commonly supersede the necessity of issues or setons, formerly so much used. "Yet it is not to be denied, that a sore will, sometimes, relieve symptoms of diseased lungs, and even of determination to the brain, independent of any direct counter-irritation upon the affected part."

Lecture VI.—"*Ulceration* is the absorption of any constituent part of the body. Inflammation is not confined to the arteries, it has also an effect on the absorbent vessels, which are thrown into a state of inordinate action, whenever any considerable quantity of blood is determined upon them."—Again, he says—"when a considerable and unnatural absorption takes place of some parts of the body, that absorption is denominated ulceration."

This is not sufficiently precise for a definition; for absorption, however considerable, and, in a certain sense, unnatural, cannot be called ulceration, unless a solution of continuity, or an ulcer be formed. Mr. HUNTER's divisions of absorption, sometimes carried too far, are nevertheless true and useful. The *interstitial* absorption, by which the body becomes emaciated, tumours discussed, and fluids removed, and which may often be regarded not only "considerable," but also "unnatural," should be distinguished from "ulcerative absorption," although in both, as our author has observed, there is an increased action of the absorbents, and a disproportion between the deposition by the arteries, and the removal by the lymphatics.

Ulceration often exists without suppuration, and its great cause is "inflammation, united with pressure;" both of these facts are illustrated by the progress of aneurismal tumours to the surface.

The symptoms, extent and rapidity of ulceration, are now well known, but its laws have not been sufficiently studied. "It has a tendency to the nearest external surface." Under this expression, our author includes the mucous surfaces as well as the skin; hence, abscesses of cellular and muscular parts, generally open on the skin—those of the liver, lungs, intestines, &c. on the lining membranes of the bronchiæ or alimentary canal. "This is a law depending, in some degree, on the *greater irritability* of those parts, which are nearest the external surface; another reason is, that the adhesive process glueing the more internal parts to each other, they become united, and in this way form a considerable solid, but the more internal surfaces have no such support."

Another law is, that new parts are more liable to be absorbed. They are more *weakly* constituted than those which have existed longer, and "*the irritability of a part is proportionate to its weakness.*" Apt illustrations are given of this important principle.

On the same principle is to be explained the fact, "that parts, more remote from the heart, ulcerate more readily than those in the vicinity of it." For one ulcer in the arm, we find twenty in the lower extremities.

Again. Parts that are little organized, in which few arteries and absorbents (nerves, should be added) are distributed, ulcerate with more difficulty, as observed in tendons, ligaments, fasciæ, &c. whence many valuable practical inferences.

The uses of the ulcerative process are next detailed and illustrated, which brings our author to the consideration of *Abscesses.*

After some remarks on their mode of formation, he observes that they become dangerous from their size. This, however, does not arise from the quantity of matter produced, as an abscess may contain a large quantity of pus, and the constitution be scarcely influenced; but it is "*the process of restoration* after the evacuation of the matter, which affects the constitution."

This last opinion is a favourite one with Mr. COOPER, to which he frequently refers, but its correctness may be doubted, as abscesses are frequently discussed, (and, of course, the restorative process is fully accomplished) without general irritation, which same abscesses, had they been opened, would have induced hectic fever, &c. We should, therefore, say, that the constitutional affection arises from an *inordinate* degree of inflammation, which is the restorative principle when moderate, but very destructive when in excess.

Why the inflammation in open abscesses should be excessive, we shall presently notice.

Another danger of abscesses arises from their *number*. Thus, the numerous pustules in small-pox are very apt to induce an irritative fever, and wear out the system.

Abscesses are dangerous when seated in vital organs, or when they press on important parts, as the pharynx, epiglottis, urethra, &c. &c. An interesting case is given of a patient being saved from impending death, by our author's detecting and opening an abscess situated between the pharynx and the vertebræ, which by its size, impeded respiration.

When the abscess is seated between a bone and its periosteum, the danger is increased; the reason is, the "union between the soft parts and bone is with difficulty produced, and the process of restoration is extremely tedious." This is not to be received as a general proposition, for, in cases of recent wounds, the periosteum will readily unite with bone; in the case before us, the observation is correct, as the bone is affected by the inflammation, and necrosis often induced.

Some interesting remarks are made on *chronic abscesses*, especially of the mammæ, which, says our author, have from their slow formation, been mistaken for schirrus, and the operation of extirpation been proposed and even executed. Two such mistakes he has witnessed.

Acute abscesses, as a general rule, should be left to nature; but when situated under the periosteum, or under a fascia, they should be early opened.

The prevention of scars upon exposed parts of the body, especially on the necks of females, should be a great object; for "no part of the practice of surgery has been more faulty, than the manner in which abscesses of the neck have been treated."

The following rules are given: Always open the abscess before the skin becomes thin and discoloured, as it would then slough; make but a small opening with a very fine knife, and always in a transverse direction, and not in the axis of the neck: for thus the cicatrix will hardly be seen among the folds of the neck: but almost every thing depends on pressing out all the unorganized flakes of matter or lymph, which are especially found in scrophulous abscesses; as, otherwise, ulceration or sloughing, with deformity, must ensue.

After alluding to hectic fever, the remainder of this lecture is devoted to the important practical question, What influence has the admission of air into cavities, in producing local irritation? Our author observes, "It is my duty to state to you my opinion; you must think for yourselves; only do not rest contented with thinking; make observations and experiments, for, without them, your thinking will be of little use." After this liberal invitation to a candid investigation, and after alluding to the well known experiments of inflating the cellular tissue and the serous cavities, as also to the accidental presence of air in the pleura and tela cellulosa in emphysema, all of which produce no injury, our author concludes in the following very positive manner:

> "He who holds that the admission of air produces the irritation attending the opening of abscesses, takes a narrow and partial view of the case; for the cause of the irritation is as follows: If a wound be made into any cavity of the body, be it an abscess or a natural cavity, soon after the vessels of the part are divided, inflammation arises to heal the wound, whether it be exposed to the air or not. If it heal by adhesion, the influence is slight, and directly terminates; but if the adhesive inflammation be insufficient or imperfect, then a suppurative inflammation follows, and granulations arise, which process produces violent influence both upon the part and the constitution. The cause is, therefore, *the division of the blood vessels,* and not the presence of air; and its degree depends on the ease or difficulty with which the injury is repaired."

That inflammation always follows the division of the blood vessels, or of any organized part of the body, whether exposed or not, is true, provided the system be not too much exhausted; but the question at issue is, Why should the inflammation be *inordinate*, and the constitutional irritation *excessive?* This question can only be answered by examining the difference in the circumstances of cavities, before and after being opened; and, at the risk of being considered narrow-minded and partial in our views, we must accept our author's invitation to think for ourselves, and maintain, that the presence of air constitutes the only perceptible difference in the two cases, and is, directly or indirectly, the cause of the excessive irritation.

The experiments referred to above, prove, in conjunction with other facts, that the directly stimulating effects of atmospheric air, which contains but a certain proportion of oxygen, are but trifling, and yet cannot wholly be denied by any one who will, at intervals, expose the cutis denuded of the cuticle, or an inflamed surface from a burn, to the influence of the air: but the great mischief caused by this fluid, arises from its *conducting powers*, by which heat and moisture are rapidly conveyed away from the surfaces which are freely exposed to a current of air, and thus great irritation ensues.* In this way, chiefly, the necessary inflammation of the external wound becomes aggravated; it transcends the adhesive stage, and extends, by continuous sympathy, to the rest of the cavity, to which the air had really no access: so that the whole is involved in an excessive inflammation, with severe general irritation. Thus it is, that the inflammation of compound fractures becomes more severe than that of simple fractures, even under similar degrees of injury; hence, also, the danger of wounds of the pleura, peritonæum, synovial membranes, &c.; hence, the greater danger of all solutions of continuity with external communications, than of those which have no such communication.

With respect to abscesses, and also to bloody tumours, which have been opened and but partially evacuated, another source of irritation is superadded to this continuous inflammation, from the chemical changes induced by even a few bubbles of air admitted to their contents. This is a matter of common belief in the profession, but which the reader will find abundantly illustrated in the works of Boyer and of Abernethy;† each of whom have proposed, almost simultaneously, the practice of making valvular openings into such cavities, and with acknowledged utility.

Lecture VII.—The second mode of union is by *Granulation*, "a process very similar to adhesion, but differing from it in one respect," viz. that the vessels on the surface of the granulations secrete a purulent fluid, as well as effuse fibrin; which fibrin becoming organized, forms a new layer of granulations, and so on, until the cavity becomes filled. This circumstance, that while pus is secreted by the granulations, fibrin is also effused on their surface, "has not, I believe, been observed, and which I learned in the following manner: I took a portion of injected ulcer from the arm, and threw it into alcohol, in order to observe its vascularity. After it was immersed in the alcohol, it was so opaque on its surface that no blood vessels could be seen. It was the fibrous matter covering the surface of the granulations, which had not yet received the blood vessels."

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* Vide Philadelphia Journal, vol. ii. p. 267, for a truly philosophical essay on this subject, by Dr. Henry Bond, of this city.

† Vide Pelletan, "Clinique Chirurgicale," tome ii. p. 98, on the bad consequences of exposing collections of blood.

We are inclined to believe this observation correct, from the changes which we have noticed in ulcers, by the application of the powder of red precipitate, not only causing a very healthy secretion of pus, but an evident effusion of fibrin, covering the granulations and facilitating the healing of the ulcer. A strong argument in favour of an idea, suggested, we forget by whom, that there is really but one mode of union; for granulations unite with each other by the adhesive inflammation. To this opinion our author also subscribes.

Many interesting and useful details are presented, on the structure, powers, &c. of granulations. Much attention should be paid to their power of absorption.

Arsenic is frequently absorbed from ulcers; and whether used externally or internally, "produces derangement of the stomach, intestinal canal, and the nervous system, sometimes paralysis," and is a "very dangerous remedy." Quacks, by applying arsenic to remove tumours of the breast, often succeed in destroying "the part, and the patient too."

Opium, applied to ulcers, will often relieve both local and constitutional irritation, and has even caused the *death of a patient.* A tetanic affection in a child, after amputation, was immediately relieved by opium to the stump, and the patient thus saved. "I have known a solution of opium, applied upon an extensive scald in a child, destroy it." Mr. TYRREL mentions two cases of temporary amaurosis, caused by the use of belladonna to a malignant ulcer, of the vagina in the one instance, and of the rectum in the second. These valuable facts manifest that sufficient importance has not been attached to external applications, in the treatment of local and general disease, especially of infants, whose systems are easily influenced.

On the formation of the *cicatrix*, our author appears to entertain some novel views. He considers that it is the vessels and granulations of the skin alone, which can form the cicatrix, and answers the obvious objection, that cicatrization sometimes commences at the centre of a sore, in the following manner: "It is not that the centre of the sore has the power of forming new skin, but that the new skin in the centre is produced in consequence of the whole of the original skin not having been destroyed, and granulations arise from the part of the skin which was left."

In the union of wounds, Mr. Cooper believes in the reproduction of all the original parts, excepting two. The cutis, rete-mucosum, and cuticle, are regenerated; so, also, the cellular membrane, tendons, bones, and nerves. As to the last, "there is still some doubt, whether the restoration of sensation is assisted by anastomosis." Pain will often return after the division of a nerve, even when some numbness remains in the part to which the nerve was distributed, as is often seen in the operation for "tic douloureux."

The two parts incapable of reproduction, are muscles which unite by tendinous matter, and cartilages which unite by bone. It might be added, that the regeneration of the substance of glands, and other viscera, never occurs, as of the brain, lungs, liver, kidnies, &c. &c.

In Lecture VIII, our author treats of *Ulcers* in a very scientific and practical manner; but as no new principle is advanced, we shall merely notice his opinions on varicose ulcers and on chronic carbuncle, after observing, that there can be no better test of surgical principles, than their application to the pathology and treatment of ulcers—a test, which the principles here advocated successfully endure.

The formation of a varicose state of the veins, is attributed to obstruction; whence distention, causing ulceration. After noticing the usual treatment, by a recumbent posture, pressure, &c., he says, much benefit is derived from puncturing the veins once or twice a week, and re-applying the bandage; and that no danger attends this operation. He, however, pointedly condemns the practice of tying the veins.

"If I were asked, which of the following operations I would rather have performed upon myself, viz. the saphena major vein, or the femoral artery, tied, I certainly should choose the latter. When an artery is tied, the inflammation is confined to the neighbourhood of the ligature; but in a vein, it is very extensive, the vessel becomes exceedingly distended, the inflammation uncommonly severe, and either extensive suppuration or mortification ensue, and death is the result."

Our author refers his pupils to Mr. TRAVERS' Essay on this subject, and we would also recommend Mr. HODGSON's valuable treatise on wounds and diseases of arteries and veins, in which he has shown that bad and even fatal consequences have arisen from a simple division of these diseased tubes, the puncture of which is not, therefore, so free from danger as our author would represent.

Under the title of "Chronic Carbuncle," our author describes an ulcer, which we have met with in practice, but not seen noticed in books.

"When the constitution is impaired from any cause, it frequently happens, that small swellings form under the skin; at first, they are red, then turn purple, and ultimately slough. The ulcerative process is slow in these cases. A white substance will soon be perceived at the bottom of the sore, called, vulgarly, a core; and as soon as this separates, healthy granulations will form, and the wound become healed."

Constitutional Treatment by alteratives and purgatives is recommended, and great confidence is reposed in the carb. of ammonia, where there is much debility. The local treatment consists in poultices, followed by the lotion of calomel and liquor calcis—("the black wash")—and the gentle use of nitrate of silver. Mr. TYRREL recommends free incisions through the skin to discharge the sloughs.

Lecture IX.—This lecture treats of the interesting subject of *Gangrene*, in a manner so scientific and practical, that we regret the want of space, which confines us to a few of the many important observations of our author.

"Gangrene may be considered under two heads, as produced either by an excess of inflammatory action, where the powers are natural, or by a less degree of inflammation, where the powers of the part are feeble.

These two cases, it will be seen, are essentially the same; for in both the inflammatory action is too great for the powers of the part. The symptoms denoting the approach of the first, are those of ordinary but excessive inflammation, followed by a change of colour, vesication, &c. &c. with symptoms of local and general exhaustion of the powers of life.

The occurrence of gangrene from a low inflammation is seen, wherever the parts are previously debilitated—our author exemplifies this in gangrene from cold.

> "If a great degree of cold is applied to any part for a considerable time, the part will become benumbed, that is, its nervous power will be diminished; and when it is thus enfeebled it will be unable to bear a very slight degree of supervening inflammation, and the destruction of its life will follow."

This observation contains the whole theory and treatment of this complaint. Where parts are debilitated by cold, by contusions, or any other cause, they cannot bear the free return of the arterial blood into their vessels. This fluid stimulates them too violently—induces inflammation, which here (from the previous debility) is excessive, and of course, soon exhausts their remaining powers; whence gangrene or death. Of course, the inference is, *prevent the sudden return of the blood to parts thus circumstanced.* Hence, says our author, in these cases of exposure to cold, "great care must be taken not to apply heat very suddenly."

Gangrene having occurred, the process of separation soon commences. Our author traces the manner of separation in the different structures of the limbs very minutely and instructively, observing, that the line of demarcation is first observed in the skin, and then in the cellular tissue.

> "Gangrene occurs to a much greater degree in the cellular tissue than in the surrounding skin, because the cellular membrane is a part of weaker living powers. It is for this reason that a sloughing disposition is so dangerous in sores extending to the cellular membrane."

This fact is exemplified in the extension of chancres in the prepuce of the penis or in the pudendum of the female, often destroying life.

The line of separation in *muscles* nearly corresponds with that in the skin, but this is not the case in *tendons*, which, like the cellular tissue, separate at a considerable distance from the points of sloughing in the skin and muscles. Why? "For it is incapable of resisting the inflammation, in consequence of its weak living powers, and separates, therefore, at the part where it joins the muscle." *Nerves* separate on a line with the skin and muscles, for their powers of life are great. The large *blood-vessels* are also divided, yet without hæmorrhage. This extraordinary fact is now well known, but the particular details of nature's work are not yet fully understood. The following is our author's account, which is marked by one singularity, formerly noticed.

> "The blood in the vessels of the dead part becomes coagulated; the coagulum, however, does not confine itself to the dead part, but extends to the living vessels, which join it, *and is, in this manner, glued to the inner side of the artery by the adhesive inflammation*, so that the vessels are, as it were, hermetically sealed—the same thing takes place in veins."

The separation of dead from living *bone* is very slow, and in another place, our author observes, that the line of division does not correspond with that in the skin, muscles, &c. but extends higher up, as in other weak parts.

Gangrene may sometimes be prevented by remedies calculated to "check the excess of action," as by leeches, and even, by general bleeding, provided the patient is of a good constitution, and in a pure atmosphere; but in all cases, caution is required, for fear "the vigour of the circulation, and consequently, the nervous powers of the constitution, should be too much diminished." "The best means, therefore, of preventing gangrene, are to restore the secretions; to diminish irritability by opium; and, in some cases, to take away very small quantities of blood."

Where gangrene arises from cold, the treatment must be different, as "in these cases, the action of the parts is feeble from a diminution of the nervous power, and it will be proper to restore it to a healthy state by stimulants of the most gentle kind." "The principle is, to stimulate gently, but to moderate the stimulus by evaporation." Gentle friction with camphorated spirits of wine is recommended in slight cases; in severe cases, friction with snow. "The friction is a stimulus which the melting snow moderates."

Thus we prevent gangrene, but when it has commenced, a gentle stimulus is necessary, "with a view of supporting the action of the surrounding parts, which are threatened with the destruction of life." The most uniformly successful application is the poultice of stale beer-grounds mixed with oatmeal.

The English surgeons have not yet adopted the use of blisters in gangrene from inflammation, which, for many years has been used by American practitioners with great success, at the recommendation of Dr. PHYSICK.

A port-wine poultice and turpentine are recommended also as local applications. During the sloughing process, the nitric acid is on the whole the best application; about fifty drops being added to a pint of water.

The remainder of this lecture is devoted to the question of amputation, and to some peculiar gangrenous imflammations; as that in the feet of old persons (Mr. POTT's gangrene,) carbuncle, and erysipelas, on all which, useful and judicious observations are made.

Lectures X. XI. and XII.—*Injuries of the head* occupy the remaining three lectures of the volume;—and the value of the observations here made, is exceedingly enhanced by the free and apposite introduction of cases, to illustrate every point, and to demonstrate the inseparable connexion which must exist between just principles and a correct practice in surgery.

The subject is introduced by an allusion to the anatomico-physiological phenomena of the nervous system, as consisting first of the brain, spinal marrow and cerebral nerves; and secondly, of the great sympathetic nerve; which two systems in some measure separated, nevertheless, decidedly influence each other, in consequence of their frequent communications.

> "If an injury happen to the head, the functions of volition and sensation are diminished; the stomach is disordered through the medium of the par vagum, and from the general communication between the grand sympathetic nerve, and those of the brain and spinal marrow, the functions of the heart and of the abdominal viscera become affected. The powers of the mind are also diminished; the memory is lost; the judgment is enfeebled:—thus sensation, volition, the involuntary actions and the powers of the mind are diminished or suspended."

Injury of the brain arises from two causes, concussion and pressure. The symptoms of *Concussion* are minutely detailed and interestingly illustrated by cases.

With respect to the state of the brain in concussion, it seems that in moderate cases, there is "merely a disturbance of the natural course of the blood through the brain."

"A fit of vomiting, by forcing the blood through the brain, will sometimes almost immediately restore the functions of the mind and body. It seldom happens that this state of brain destroys; but when it does, nothing is found on examination, which will account for the symptoms. It is, therefore, an alteration of function, but not a disorganization." "But when the concussion is very violent, it is attended with lesion of the brain."

These states of the brain are illustrated by various cases and dissections, and there can be no doubt of the truth of these observations; but, we think, there is some inaccuracy in the mode of expressing these ideas, which may lead to improper practice.

We should say, that the symptoms of concussion are the effect of the direct impression made on the medullary or nervous mass of the brain,* and *not* to the disturbance of the cerebral circulation; this last is itself but the *effect* of the former, and, considered abstractly, would give rise to the symptoms of syncope, not to those of concussion.

Under this view of the subject, the mere occurrence of laceration does not increase the symptoms of *concussion*, although it aggravates the *danger* by causing effusion, and of course, symptoms of compression, and also, by increasing the liability to inflammation. A knowledge, therefore, that laceration often occurs in concussion, "leads," says our author, "to a judicious treatment of the injury, as laceration of the brain is frequently followed by extravasation, and concussion in the commencement, may be compression in its result."

This brings him to the treatment of concussion, where his observations are valuable, and are all marked by nice but important distinctions. The great danger of concussion is the liability to cerebral inflammation: this is to be removed, and also to be prevented by bleeding largely, but "this practice may be carried to excess."

"Watch your patient with the greatest possible anxiety, visit him at least three times a day, and if you find any hardness of the pulse supervening after the first copious bleeding, take away a tea-cup full of blood, but do not go on bleeding him largely, for you would, by this means, reduce the strength of the patient too much, and prevent the reparative process of nature."

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* Vide the author's observations on irritation.

Many fatal cases have occurred in which by excessive bleeding, "the slight degree of inflammation necessary for adhesion was removed, and the restorative process of nature consequently prevented."

"Hence you are not to resort to it as a matter of course, the moment you are called to a patient under concussion." "This conduct is quite irrational; for suppose the pulse could scarcely be felt at the wrist, and the surgeon were in such a case asked why he proceeded to bleed, what would be his answer? The probability is, that he could make no reply; or he would perhaps say, that he bled, because the accident had determined a great quantity of blood to the brain. It is not with this view, that we bleed in concussion, but in order to prevent inflammation. I have seen patients, who would have died if a large quanity of blood had been taken away at the time of the accident." "The principle on which you should act, is never to do any thing in your profession *without a good reason*." "It is not to bleeding that I object, but to immediate bleeding in those cases, in which there is a remarkable depression of the nervous power."

Hence in all cases, we must wait for some symptoms of *re-action*. To facilitate re-action should any means be adopted? This is a delicate point, and our author almost entirely evades it. Speaking of emetics, he merely observes, "that spontaneous vomiting is often useful, by relieving the stomach of its contents, and by propelling the blood to the brain, and thus restoring the powers of life." Perhaps we may, with propriety, observe, that where the powers of life are evidently sinking, external irritations and stimulating enemata, particularly of assafœtida, as recommended by the experienced Mr. HENNEN in his military surgery, should be resorted to; watching, however, their effects, very cautiously, and meeting the first symptoms of re-action by a judicious evacuating treatment.

After re-action is established, besides bleeding our author recommends purgatives (mercurial) as evacuants and counter-irritants, and also diaphoretics of the antimonial preparations, never, however, with opium, as this narcotic stimulant "confounds the judgment, and prevents your seeing what are the effects of the opium, and what those of the injury; for opium produces the same effects upon the brain, as some of the injuries to which it is liable."

Counter-irritation by blisters is very useful, after suitable evacuations, to prevent and subdue inflammation. It is singular, that the application of cold water, and even of ice, to the head, after it has been shaved, is not here recommended by our author, for of all modern improvements in the treatment of cerebral excitement, nothing is comparable to this powerful repellent. In the subsequent stages, where general excitement has been completely subdued, blisters may be substituted.

Our author enters his decided protest against trephining for any of the symptoms of concussion, at the time of the accident, or subsequently; forty years ago, this practice was very common, but "inflammation of the membranes of the brain followed, and nearly all died." "But do our patients now die from the effects of concussion? No, by depletion we rarely lose a patient." "Trephining in concussion is now completely abandoned."

The symptoms of *Compressed* brain differ from those of concussion, chiefly by the apoplectic stertor, and the slow and labouring pulse: the loss of sensation and voluntary motion, and the dilatation of the pupils are also more frequent in compression. Compression arises from effused blood, from depressed bone, or from the collection of matter.

First. From extravasation of blood. Here the symptoms do not occur immediately after the accident, the patient can often give an account of the circumstances, gradually becomes comatose, and then the apoplectic stertor begins.

The situations of the extravasated blood vary, but there are no symptoms during life by which its locality can be designated. When exterior to the dura mater, it is circumscribed, and hence not in any great quantity. Our author has never seen more than ℥iij effused in this situation. When, however, the effusion is under the dura mater, a large portion of the brain will often be found covered by the blood.*

The reason of this diffusion of even a small quantity of blood, between the dura and pia mater, we can only explain by allowing the correctness of Bichat's description of the tunica arachnoidea, as forming in reality, a serous cavity between the pia and dura mater; one portion of the arachnoid membrane lining the dura mater, and another the pia mater, in the same way as the pleura covers the lungs, and also the ribs.

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* There are here several erroneous expressions in the published text, which we can only attribute to a hasty transcript of notes by the editor. We have endeavoured to present the true views of the author, we hope, with success.

In these cases the blood is effused from a rupture of the vessels of the pia mater. Blood is also sometimes effused in the substance and ventricles of the brain.

In the treatment, free depletion to prevent and to remove inflammation, and it might be added to promote absorption, is nearly all that should be done. "If there be a bruise, indicating the spot at which the injury had been sustained, you may trephine, *after* every other means have been tried ineffectually." In some cases, however, when the blood is seated under the dura mater, and exterior to the pia mater, in the arachnoid cavity alluded to, it protrudes the dura mater through the opening in the bone made by the trephine. We regret that this case has not been noticed more distinctly by our author, for here, the best surgeons forbid the puncture of this membrane as being almost inevitably fatal.

Whence this danger? We should say, from opening a serous cavity, the sides of which are, in this case, kept from uniting by the coagulated blood, and hence, in almost every instance, become subject to a continuous inflammation, extending over the hemisphere of the brain; precisely as a pleuritis follows wounds of the pleura, accompanied by collapse of the lungs, and where the external wound does not unite. Such extensive arachnoid inflammations are almost always fatal, and here the danger is aggravated by the presence of blood more or less altered by the influence of the air.

A *fracture* of the cranium, in itself, is seldom dangerous, but becomes so by being complicated with symptoms of concussion or compression. There is also a remote danger, even in simple fractures, from inflammation.

The treatment of fractures of the cranium must, therefore, vary considerably, and requires an aquaintance with the nice distinctions laid down by our author.

The first case supposed is a fracture without injury of the brain, and without depression. If there be a wound of the integuments, endeavour to heal it by the adhesive inflammation as soon as possible. Should there be no external wound, never make an incision to examine the state of the bone, &c. as you would thus convert it into a compound fracture, with all its dangers. Trust to constitutional treatment.

Even if symptoms of injury of the brain be present, do not decide hastily. It not unfrequently happens, that after bleeding, the symptoms of concussion disappear, or those of extravasation lessen so as to lead to a different view of the case.

The next case supposed, is a simple fracture with depression. It is not always easy to determine whether the bone is really depressed. But, where there is actually depression of bone, yet no wound of the scalp, and no symptom of injured brain, it would be wrong to make an incision to the bone, and to trephine, as a "simple" would thus be converted into a "compound" fracture, and consequently, greatly increase the danger of inflammation, "which rarely follows a simple fracture with depression." "Even if there be symptoms of injured brain and the fracture be simple, do not immediately trephine. If the symptoms do not yield to depletion, then, and not till then, perform the operation of trephining."

"If the fracture be *compound*, the treatment must be very different; because a compound fracture is followed, very generally, by inflammation of the brain, and it will be of little use to trephine when inflammation is once produced." The operation would increase the inflammation. In all recent cases of compound fracture with depression, the sunken fragments should be elevated; although it is true, that inflammation does not always follow such accidents, yet an exemption should not be calculated on. These principles are illustrated by cases.

He also details several valuable cases, to illustrate another important observation, too much neglected, viz. That symptoms of compressed brain are not always immediate, but may appear weeks, months, and even years after the accident, and remain for a short, or even for a long period. This arises from any cause, inducing a hurried circulation in the head, the cavity of which is lessened by the depression.

In one case, hemiplegia and insanity was almost immediately relieved by trephining a patient, six weeks after the accident. In another, epileptic fits, occurring frequently, were entirely cured by the same operation, six months after the reception of the injury.

"*Wounds* of the brain frequently happen without immediately producing any interruption to the operations of the mind; but, should the wound be accompanied by either compression or concussion, then the particular symptoms, which characterize those injuries, will be present. If, however, the wound be a simple incision or laceration, it does not produce symptoms until inflammation succeeds. Indeed, considerable portions of the brain are lost, and yet the mental and bodily functions continue unimpaired."

These observations, we conceive to be very valuable, for, although their truth must have been long practically known, yet surgical authors have not, with sufficient distinctness, noticed, that a mere solution of continuity of the brain, in itself considered, is accompanied by few bad symptoms, provided that no compression or concussion be present. Hence, the danger of these accidents arises, says our author, from two causes: inflammation, and the formation of a fungus.

Wounds of the brain unite like other soft parts of the body, by adhesion or by granulation, both of which are the result of a moderate inflammation. Hence, care must be taken on the one hand, to prevent an excess of inflammatory action, and on the other, not to lower the system so as to prevent inflammation. If adhesion does not occur, "granulations form, which at length project through the opening of the skull, and give rise to the fungus of the brain. Upon its proper treatment the safety of the patient depends; if it be not repressed, the constitutional irritation, and the danger of a fatal termination, will be great; if the rising of the fungus be prevented, a cure may be effected."

Mr. Cooper recommends *pressure*, by means of a piece of lint, wet with liquor calcis, secured by adhesive plaster, applied so as gradually to reduce the fungus to a level with the bone, when cicatrization will take place from the edges of the scalp. In doing this, great care is to be paid, that symptoms of compressed brain are not produced, as in this way much injury might result, of which our author himself details cases. "It is sometimes necessary to apply caustic to the fungus." "This plan of treatment, by repressing the growth of the fungus until the scalp heals over it, is unquestionably the best," and is, as usual, illustrated by cases.

The cases noticed by our author, are strictly a "*fungus*" of the brain, arising, as he says, from exuberant granulations, but there are other cases to which the term of "*hernia cerebri*" is applicable, which, we regret, he has not described.

Hernia cerebri consists in a protrusion of the substance of the brain, through an opening in the cranium and dura mater, sometimes very little altered from its natural appearance, but generally more or less disorganized by the original injury, or the subsequent inflammation.[*] The protrusion appears, in all cases, to be caused by the effusion of fluids, especially of blood or of pus, within the cranium, causing pressure on the brain, and is hence usually accompanied by *symptoms* of compression of this organ. The propriety, therefore, of the common practice of excising these hernial tumours, of applying caustic, or pressure, is exceedingly questionable; and experience is yet to decide how far the plausible suggestion of Abernethy, Boyer, Hill and Physick, of evacuating the effused fluids by puncture, will be justifiable. There are many strong arguments against the operation, and in the present state of our knowledge, it would only be justifiable in desperate cases.

The subject of *Inflammation* of the brain and its membranes, is next more particularly noticed. When suppuration has taken place, the matter is sometimes, although rarely, situated exterior to the dura mater, and may be successfully removed by trephining. "I have witnessed one case of an abscess in the longitudinal sinus of the dura mater."

The most usual situation is between the pia mater and the brain; "and in this case, the matter is diffused over the hemispheres of the brain." "When the matter is seated between the pia mater and brain, it will be of no use to open the dura mater, as very little will be discharged, there being no communication between one part and another; for the matter is contained between the vessels which pass from the pia mater and brain."

There seems to be some inconsistency in these two observations; for, if there be no communication between the parts, how can the matter be diffused over the brain?

When the matter is found thus extensively diffused, is it not situated between the dura and pia maters, in the arachnoid cavity?

When matter is situated in the substance of the brain, "the only circumstance very curious, is, that you would not suppose from the symptoms, that matter was forming; they are those of compression, rather than irritation. If the membranes of the brain be attacked with inflammation, symptoms of irritation will be present; but if the brain itself, they will be those of compression."

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[*] Vide Stanley's Observations in Medico-chirurgic. Trans. vol. 8.

Inflammation of the brain is more slow in its occurrence than that of other organs; it rarely comes on sooner than a week, sometimes, not for two, three, or four weeks; and our author gives a case of its occurring three months after the accident.

The usual treatment is directed for inflammation of the brain.

It will be right, when with symptoms of compression of the brain, there are also indications of the formation of pus, to perforate the cranium, and examine whether the matter be exterior to the dura mater. But "when an abscess is placed *beneath* the dura mater, I have never seen a case recover from trephining for it, although that membrane has been punctured for its discharge." In a note, it is added, "when the dura mater is punctured, the pia mater should be punctured also, as adhesion will more readily occur." Soon after, we notice the following observations, the truth of which we have advocated, since we met with BICHAT's description of the arachnoid membrane, already alluded to at page 181.

> "It is certain, that there is less danger when the dura mater and pia mater are both wounded, than when the dura mater is alone injured. I will tell you the reason: in the former case, where both the dura mater and pia mater are wounded, the brain immediately projects and fills the wound. If I were to pass quicksilver through an opening of the dura mater, where would it go? Into the lower part of the spine, between the tunica arachnoidea and the dura mater. (Between the two lamina of this arachnoid tunic. BICHAT.) Inflammation of the dura mater (of the arachnoid membrane, BICHAT,) spreads over the whole cavity, as erysipelas does over the surface of the body; whereas, in the first kind of injury, fungous granulations will project through the opening, which would easily close by the process of adhesion."

Which adhesion, here, as in other serous cavities, would, of course, check the continuous inflammation.

The volume closes with some judicious observations on injuries of the scalp—pointing out the dangers which often result from the most simple, as well as the most complicated, wounds of this sensible and irritable portion of the head. We forbear, however, any further remarks, and conclude our laborious analysis, with the wish, that the future volumes of this work may be written with more attention to perspicuity. Should they be as valuable as the present, we shall not fail to diffuse as widely as possible, a knowledge of their more important contents.

MEDICAL LITERATURE.

RETROSPECTIVE REVIEW.

Article XIII.—" *Georgii Baglivii, Opera Omnia Medico-Practica et Anatomica. Venetiis, ap* Gasparum Girardi, 1738, *4to.*"

The gastritic and gastro-enteric theories of fever, which have obtained so many powerful advocates in our own day, have lately caused the name of the distinguished writer above-mentioned to be brought more frequently before the profession, than it had been during the preceding forty or fifty years. A sketch, therefore, of his opinions in reference to these theories, may not be ill-timed, since he has very strong claims to be considered as their author and promulgator, as we shall show.

Baglivi was born in 1669, at Ragusa, on the shores of the Adriatic; he studied medicine first in the ancient school of Salernum, and afterwards at Naples, from whence he proceeded to Bologna, at which university he received the Doctorate. When he had travelled throughout Italy and Dalmatia, visiting various hospitals and seminaries of learning, he settled at Rome, was appointed to the chair of the Theory and Practice of Medicine, and in 1695 was made Professor of Surgery and Anatomy, by Clement XI.

Baglivi's reputation was very great during his life-time, and he enjoyed the respect and celebrity which are too often awarded at a period in which the object of them can be little benefitted or gratified: The anticipation of honours, to be paid when the body is dissipated and resolved into its original elements, can afford but small incitements to the vigorous prosecution of literary labours or enterprises; they are the happy, therefore, who enjoy them during their life, when they can see, and hear, and know, that their labours are not in vain.

The works published by Baglivi, have always enjoyed considerable reputation, which is now increasing, rather than diminishing.

He is admitted, on all hands, to have been a learned man, possessed of an inventive and vigorous intellect, trained to habits of close and discriminating observation, which would have probably been very greatly developed, but for his premature death, which occurred on the 17th of June, 1707, he being thirty-eight years of age.

The subjoined bibliographical* list contains, we believe, the titles of all his works, and the large account of editions will show, in some degree, the respect they have had. For the present, our intention is, not to examine the whole of his works, but to confine ourselves to a very short account of what he thought concerning the gastric affections in fever.

Baglivi was in some degree a sound solidist, especially in reference to practical medicine. It was too early, however, to become sufficiently a solidist. The humoral pathology, which, with very slight modifications of the Hippocratic statement of it, had reigned from the days of **Galen**, was not immediately subverted by the brilliant discoveries in anatomy and physiology which distinguish the seventeenth century. The new doctrines of absorption, hæmatosis, and circulation, were certainly the grand levers by which the final overthrow of this monument of antiquity was effected by the Gottingen school, under **De Haller**, followed by the Edinburgh school, under the auspices of Dr. **Cullen**. The greatest credit is due, however, to **Haller**; for it was by his scholars that solidism was first clearly announced, "Ergo a fibrarum aucta aut imminuta irritabilitate omnis morbus."

Haller's experiments on irritability and sensibility were commenced about 1742; and he edited the "Experiences sur les parties sensibles et irritables du corps humain," in 1759.* He died in 1777. But Dr. CULLEN did not begin to lecture on physic till after these works were published, (i. e.) in 1766. If, as we verily believe, these works changed the whole face of theoretical physic, we ought to give DE HALLER the credit of this change, as his life which was glorious for the profession and for humanity, was devoted wholly to the advancement of the one, and the benefit of the other. We make these remarks in reference to a general belief, here and in England, that Dr. CULLEN deserves the principal credit in this matter. The triumph of CULLEN's spasm over BOERHAAVE's lentor, &c., or rather the proud success of the Edinburgh school over its prostrate rival at Leyden, has given to the Americans the habit of looking to CULLEN and his school, as the great fountain of reform, which is unjust. Sir GILBERT BLANE, in his work called Medical Logic, says, "It was in the school of Edinburgh, under Dr. CULLEN, that the doctrines of BOERHAAVE received their chief overthrow. CULLEN was the first who clearly marked and defined the principles of life, as distinguished from those of dead matter."—p. 78. Than which, nothing can be more incorrect, since the merit is HALLER's.

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* De Praxi Medica ad Priscam observandi rationem revocanda, libri duo, Accedunt Dissertationes novæ. Rom. 1696, 8vo, Lugd. Batavor, 1700, 8vo: translated into English, and published under the title of Practice of Physic; containing a just parallel between the wisdom and experience of the ancients, and the hypotheses of modern physicians, with a curious dissertation, &c. Lond. 1704, 8vo. Specimen quatuor librorum de Fibra Motrice et Morbosa, Ultraj. 1703, 8vo. Canones de Medicina Solidorum, Lugd. Batavor, 1707, 8vo. Opera Omnia, Lugd. 1704, 4to; *Editio Septima*, Lugd. 1710, 4to; Paris, 1711, 4to; Nuremberg, 1738, 4to. (*My copy, as at the head of this article, is Venetiis*, 1738, *4to, and is noticed neither by* BRUNET *nor* WATT.) Venetiis, 1752; Paris, 1765; with a preface and emendations, by PINEL, in 1788, in 2 vols. 8vo. De Vegetatione Lapidum in oper. ejus. *Vid.* WATT's *Bibliotheca Brittan.*

It will be evident from the foregoing that BAGLIVI lived in a time unfavourable to the acquisition of sound pathological views, and his ideas of disease are certainly involved in, and obscured by, the predominant theories in which he was educated. Yet, trained in habits of close observation, the mind will judge for itself with a clearness and freedom, which no clouds of error, no dogmatical pale, can wholly prevent.

We shall now proceed with our business, which is to show what were the peculiar opinions of BAGLIVI.

It is well known that much controversy has long been had in regard to the existence or non-existence of idiopathic fever, and although most of our physicians, who have been in practice twenty years, derived their ideas of pathology, either directly or indirectly, from the Edinburgh School,† it is probable that a majority of the profession here is inclined to believe in the local origin of all febrile affections. Dr. **Cullen** comprises in his order of (idiopathic) fevers, not only intermittents, as tertians, quartans, quotidians, but also continued fevers, as synocha, typhus, synochus and even hectic.

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* His paper, De parib. corp. hum. sculicuti 6. irritabil. appeared in the Gottingen Comment. 1753.

† Dr. Cullen's definition is, Febres, Prægress is languorelassitudine et aliis debilitatis signis, pyrexia sine *morbo locali* primario.

Dr. **Wilson Philip** supposes the exanthematous fevers to be strictly idiopathic, and accordingly arranges them in his second class of febres idiopathicæ. Fordyce admitted idiopathic fever. Dr. **Clutterback** believes that all these fevers depend on a primary affection of the brain. Dr. **Broussais** attributes them to inflammation or irritation of the mucous membrane of the stomach and intestinal canal. In the University of Pennsylvania the local origin from irritations of the stomach is widely promulgated.

Dr. **Beddoes** thought that typhus, synochus, malignant, spotted, yellow, and other fevers, though called idiopathic, have, at all times, been attended by local inflammation.

Heister held the gastro entritic theory, in its fullest extent, as applied to malignant diseases.

Duretus in the coacæ,* held the local doctrine in relation to leipyrias and malignant fevers generally.

Riverius says, that acute and malignant fevers rarely arise without inflammation of some viscus.

Baglivi who has so strongly asserted the local doctrine in regard to what have been called malignant diseases, seems to admit the existence of idiopathic fevers, in the introduction to the treatise de fibra motrice, as may be seen in the following.

"In universal (idiopathic) fevers, (i. e.) such as depend on a morbid state of the blood, we have less occasion to trouble ourselves about the *affected part* for the purpose of drawing from thence the curative indications. The primordiæ of fevers, or first morbid part, are mostly unknown, and if we should ever learn them, it would still be necessary to direct the means of cure rather in reference to the state of the feverish blood, than to any sophistical speculation about proximate causes, or the first morbid point, which are too subtle for our comprehension. These directions are applicable to all those fevers which derive their origin not from læsions of the organs, but from congestion of humours in the primæ viæ, or in the mass of the blood.—Oper. 157.

To the above we may add what he has said in his Lecture "de Febribus in genere," as to the cause of most of the cases of fever which he met with in his practice. The doctrine taught in the practical chair of the University of Pennsylvania, is, that the aerial poisons which occasion fevers, are taken in by the mouth, and conveyed to the stomach by saliva, in which these poisons become entangled. The same is taught by BROUSSAIS.[*] BAGLIVI expresses himself as follows.

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*Commentaries on Hippocrates.

> "Some of those *summer* fevers which prevail at Rome, are caused by the errors in diet, which persons are tempted to commit in the country, and not by any aerial poison; but leaving *such cases* out of the question, we shall find the generality of them produced, not (as commonly supposed) by an acid, but by aerial alkaline salts; for the various earthy and mineral particles which are raised into the air by the solar heat, become extremely attenuated, and acquire a highly volatile, alkaline, rather than an acid, nature, and being, by means of the respiration, communicated to the blood in the lungs,[†] produce in the first place, a dissolution of the mass, and afterwards the effects of coagulation.—(*qu! lentor.*)

We are not prepared to admit that idiopathic fevers are so rare as many persons imagine, and have no objection, therefore, to the hypothesis of BAGLIVI, that the miasmata of marshes or of human bodies, may as well operate on the system by means of the lungs as by the means of saliva conveyed into the stomach, for the opportunities of attacking us by the latter are much less numerous than by the former; furthermore, as we have no gastritic theory to uphold, we may with more propriety admit that more than one avenue is open for the entrance of the febrile causes. By adopting the gastritic theory, the Broussaians, in order to be consistent, have applied their gastritic explanation to the mildest forms of intermittents, and have admitted, without any modification, the old maxim "ubi irritatio ibi fluxus,"[‡] a maxim, which, in the main, is true, but which it requires a whole train of pathological reasoning to prove and establish, the two ideas irritatio and fluxus, being not at all approximated in this case, but on the contrary, divided by several others of great weight and importance.

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[*] Les vapeurs putrides sont avalees monsieur avec la salive a laquelle elles se melent continuellement; les surfaces digestives en sont impregnees, &c.—*Catechisme*, &c. 53.

[†] The same doctrine is taught in PARE's treatise on the plague.

[‡] Or, ce qui appele le sang dans lès visceres c'est *l'irritation ;* je veux dire que l'action vitale, augmentant tout a coup dans les organes interieurs, le sang s'y precipite et abandonne les parties exterieurs." —p. 263. "Et comme le sang ne se meut pas de lui meme mais se rend coustamment ou l'irritation lui appele, &c."—p. 265. *Le Catechisme de la Medecine Physiologique.*

But if **Baglivi** was not to the full a Broussaian, he carried the doctrine far enough for us, in the section on malignant and mesenteric fevers, concerning which, he remarks that

> "The generality of physicians, as well as the common vulgar, deem those to be malignant fevers, which, being accompanied by a variety of bad symptoms, manifest a rapid tendency to a low state. This fanciful appellation, malignant, owes its origin to the ignorance of physicians themselves, and is kept in use by the common people, who obstinately believe that all who die with fever are the victims of its malignancy: There are even many physicians, who adopt this latter opinion. I will not deny that fevers are occasionally produced by a poisonous humour, as for example, in such as have eaten poisonous mushrooms, and similar noxious food; but I do deny them to be of such frequent occurrence as is imagined, both in and out of the profession; Those which seem to be malignant being referrible to *a phlegmonous or erysipelatous inflammation of the viscera,* (i. e.) they can be traced to an assignable and evident cause; where then is the malignancy?"—Opera 32.

After noticing what he calls *febres lymphaticæ*, a kind of remittent, which he regards as among the most pernicious in the world, he proceeds to show that the symptoms of malignancy are often the consequence of bad treatment; he says, that when he has the whole management of a case from the commencement, he has

> "Rarely had to contend with any malignant fevers," but notices in the patients of others, "a thousand various and grave accidents, which frequently are fruits of the bad method of cure, and do not belong to the disease strictly. Though these be the common and daily results of experience, some are occasionally met with of a grave and dangerous character from the offset. These the vulgar call malignant, (i. e.) dependant on some poisonous humour, on which imaginary and fictitious account, recourse is immediately had to spirituous, aromatic, alexipharmic, hot, volatile, and a thousand such incompatible remedies, which add to the dangers they are intended to remove."—33.

Baglivi in the above passage certainly advocates a reasonable solidism, which might be advantageously imitated by some of our moderns, who use the term malignant without much consideration of the real value of it. As in the case of yellow fever, confessedly dependant on inflammation of the stomach for a large share of its importance, and not at all on any putrescent alteration in any portion of the fluids. The following passage will make still more manifest the gastric pathology of our author.

"As for me, I may truly say, that by diligent observation, and close meditation on the subject, I have learned that these malignant fevers are traceable to two principal causes. 1st, *Inflammation of the viscera*, and 2ndly, *crudities existing in the primæ viæ*, or mass of the blood. At Rome this *morbid state of the first passages is most generally the offending cause*, and not any change in the circulating mass," &c.—32.

He is confirmed in this view, by what occurs in delicate persons affected with fever, or such as are of studious habits or dyspeptic, "in whom," a slight disturbance of the

"Humours by increase of heat, or a biliary derangement, has been sufficient to disorder the whole system, so as to produce dryness of the tongue, smallness of the pulse, cold extremities, anxiety, and other such symptoms as denote malignancy; but which in reality, depend on *irritations seated in the stomach itself*, and which have disappeared when these irritations have been allayed."

The term mesenteric fever, as used by our author, is objected to by Heister, who has written a very good chapter on them, under the title of acute stomachic, and intestinal fevers, which he prefers to the term mesenteric, as conveying a more just idea of their nature.*

Having now presented his ideas in the general, we shall proceed to the more particular details of the several kinds of mesenteric and malignant fevers, in order that the reader may see the extent to which this pathology is applied by Baglivi.

"Among what are called malignant fevers, the principal ones are those which the ancients have denominated tritæophyas, hemitritæus, typhodes, assodes, elodes, leipyria, and epiala, all which are certainly of a very grave character, and deadly, except the patient happily fall into the hands of a learned and prudent physician, for those symptoms which are commonly but falsely noted as malignant are very rapidly developed. They are to be ascribed to an *internal inflammation*, which occasions an impeded flow of the liquids, and a great variety of serious accidents; or else, to a morbid state of the humours in the primæ viæ, or in the mass of the blood. If this be not carefully distinguished and understood, more harm than good will result from the physician's ministrations."

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* Heister's Compend. Med. Prac. p. 85.

Precisely the same enumeration of diseases as the above, is made by Heister, in his account of acute stomachic and intestinal fevers, with the addition of dysenteric, petechial, and catarrhal fevers. "All of which," says he, "may be conveniently comprehended under the common titles of stomachic and intestinal fevers; for there is no necessity, as before said, of multiplying names and entities, which confuse the student and occasion mistakes."*—p. 89.

Dr. **Broussais** comprises them under the titles of gastritic or gastro enteritic fevers, as in the Catechisme, p. 28, 29, 30, in which the bilious or gastric, mucous, ardent adynamic, putrid, malignant or cerebral, and inflammatory fevers are explained.

Baglivi says, p. 34,

> "All continued fevers which have exacerbations every day, with an accession of bad symptoms, are either in the number of tritæophyas or hemitritæus." "The hemitritæus, or double tertian, has accessions every day; but the fever is more acute one day than another." "The accessions of semi-tertians are very long, lasting from twenty-four to thirty-six, and even forty-eight hours, and occasionally becoming apoplectic." "They are very dangerous, particularly on account of the gastric læsions which they occasion, and frequently degenerate into hectic and dropsy, the consequence of *depraved alterations of the primæ viæ*. Indeed, I may candidly confess, that *two-thirds of the fevers* which prevail in Rome, are deducible from an *infarcted mesentery*, and a protracted, putrid cacochylia." "Those who labour under protracted disease, generally perish with this sort of fever; for the long duration of their sickness weakens the tone of the stomach, its digestive power is destroyed, and the primæ viæ being oppressed with crude and undigested humours, the fever finally breaks forth." "In the number of malignant fevers, is to be mentioned the leipyria, marked by vehement inflammation of the stomach, great heat at the centre, and coldness of the surface of the body. *It depends on ignis sacer, or erysipelas seated in the stomach.*"

Baglivi regards this inflammation as seated "in that part of the stomach which corresponds to the concave surface of the liver;" and its "importance is increased by the obstructions to the flow of bile consequent on this inflammation." This sentiment seems to be echoed by the Medecins Physiologistes, who suppose that in some of the *gastrites*, the bile, in consequence of irritation and inflammation, is attracted into the stomach; but if, by bad treatment or otherwise, the case is converted into a gastro-enterite, then the bile proceeds into the intestines. Vid. Le Catechisme de la Medi. Physiolog. Paris, 1824, p. 16.—"The bile is a matter entirely passive, which goes wherever irritation invites it—qui se rend on l'irritation l'appele," &c.

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* Vide Heister's Comp.

But, to return to BAGLIVI; he says, "An *inflammatory crispation of the stomach*, produces a similar crispation and disorder in the whole system of vessels and fibres; whereby, the circulation of the fluids towards the superficies being impeded, coldness is necessarily produced. This is also the occasion of the dry and parched state of the tongue, the vehement thirst, the quick, small, irregular, scarcely perceivable, pulse. This small pulse is observed in all affections of the stomach, and especially in such bad sorts of inflammation as the leipyria."—p. 35. "Neither venæsection nor purgative medicines are proper in the commencement of leipyria." We shall not detain the reader, by laying before him BAGLIVI's reasons for excluding these important agents on these occasions. This practice seems inconsistent with that which he recommends in typhus; but the extreme violence of the attack, and the rapid development of bad symptoms, are, it is presumable, the reasons which deterred him from venæsection.

It will be remembered, that leipyria is inflammation of part only of the stomach; but

"Typhos *totum* occupat ventriculum." And, again, "Typhus, or ardent fever, depending on *inflammation of the whole stomach*, is marked," &c. &c. p. 36. "In *inflammations* of this sort, blood is immediately to be taken from the arm, at any period whatever, and in proportion to the necessity of the case; because, if it is deferred, there is great danger of the *inflammation* terminating in abscess or gangrene."

In relation to the efficacy of bleeding, he remarks, that he has seen "the epigastric tension, and other bad symptoms, yield immediately after a bleeding, and a repetition of this operation has cured the patient." After bleeding, he advises us to have recourse to nitre, antimonials, and bland demulcent drinks, as barley water. He particularly recommends scabious tea: "Avoid," says he, "the use of too many medicines"—fuge purgantia tanquam pestem!! Yet he recommends us carefully to obviate accumulations of fæcal matter, by means of fomentations and enemata; and when these are found insufficient, some mild preparations with tamarinds, may be cautiously used, provided the *great ardor* and the extreme violence of the inflammation do not contra-indicate. **Baglivi** seems to have entertained an abhorrence of purgatives, at least equal to that of the Medecins Physiologistes. In the De Fibra Motrice, cap. vii. corrol. p. 193, he observes, "When the resistance of the solids is greater than that of the fluids, in consequence of their excessive siccity, irritation, and tension, if you give strong diuretics, purgatives, or diaphoretics, you will just in proportion to their strength increase this irritation," &c. &c. This doctrine is sufficiently general to excommunicate the whole tribe of cathartic medicines, and brings to mind the singular position of **Tissot**, in his Discours preliminaire to **Haller**'s Experiences sur l'irritabilite, &c., viz. "We may hope to see established as a fundamental maxim, that, except in a very small number of cases, every purge is destructive to the human body; and that the less we have of health to spare, the fewer we should take of them."

This doctrine, whether expressed by **Baglivi**, **Tissot**, or **Broussais**, must sound as very extraordinary in the ears of American physicians. We have certainly no wish to speak in the least degree harshly of the Broussaian doctrine on the subject of purgative medicines, or any other subject, but are free to express our admiration of its simplicity and unity. Perhaps the lancet, leech, gum water and blister, may eventually supplant the whole race of pharmaceutists and apothecaries. We may be permitted to say we regret that all those who have lost patients before the promulgation of the doctrine physiologique, must be considered as accessaries of the grim tyrant whom they pretended to baffle. It may be true, a Broussaian would cure the patients that we should lose, (not kill,) and if so, they are quite justifiable in their confidence, in their present theories of fever; but this confidence has not been wanting at all times; and all men have found some to believe them,* better qualified for their peculiar employments than all others beside. One thing is certain, viz. That a vast multitude of persons of every age, sex, and condition, have been hurried to untimely graves since the year 1793 in the United States, provided, always, the Baglivian or Broussaian doctrine on purgatives in fever be correct. As to JAMES HAMILTON, M. D., author of the excellent work on purgative medicines, what an enormous evil has his existence been, if they are of such fatal tendency as has been represented! As we are on the subject of typhus, we cannot do better than give his account of the state of practice on this point, about the middle of last century. Dr. H. was appointed physician to the Royal Infirmary in 1765. He informs us that

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* **Guillemeau**, in his apologie pour les chirurgiens, (Opera, p. 804,) says, "Les discours communs de chacun, sont aujourdhuy plus vains, fabuleux, et imaginaires, que la naissance des Dieux, l'histoirre des Geants, la Doctrine de la pierre Philosophale, and mille autres phantasques chimeres. Il ne se trouve a present en France qu'un bon chirurgien, que chaque Seigueur croit avoir; d'ou leur commun dire, J'ai le meilleur chirurgien du monde, et comme tel, on le vante de mille absurdes impossibilitez. L'un loue le sien, d'avoir en un tourne-main, guéry quelque blessé tout au travers la teste, dont le cerveau en sortoit; l'autre soutient accariastrement, le sien avoir remis un oeil tombé en terre, sans perte de veue, ou bien avoir coupé *une por*tion du foye, ou ratte, sans que la mort soit ensuivie: quelqu'un

> "At that time the cure of typhus was thought to consist chiefly in the removal of atony and spasm from the extreme vessels of the surface of the body. For this purpose, together with other medicines, weak antimonials were given freely; an emetic and purgative medicine were exhibited on the first approach of the attack, but the state of the stomach and bowels was little regarded in the after periods of the fever. An alvine evacuation was occasionally procured by a mild clyster, while purgatives were given with extreme diffidence, least, by their operation, they should rivet the spasm of the extreme vessels, and increase debility, one of the supposed direct causes of death in fever. These apprehensions may still bias the practice of some, as they certainly did bias mine for a long time."—p. 18.

At page 21, he says, "more extended experience confirmed these conjectures (of the value of purgatives in typhus,) and I was gradually encouraged to give purgative medicines during the course of typhus, from the commencement to the termination of the disease." Dr. HAMILTON has never had occasion to regret the use of purgatives in typhus fever, when used within his limits. Dr. H. made use of calomel, jalap, senna, magnesia, salts, and such articles which are of considerable force, at least not deserving the name of trifling. The doctrine of the modern school, or which is called the physiological school is, that all these fevers are inflammations of the mucous membrane of the stomach, when they are gastric fevers, or of the stomach and bowels when they

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jugera que guérir une harquebusade au coeur, au foye, vessie, ratte, estomach, intestins, et grands vaisseaux, sont les jouets et exercircs les plus familiers du sien; qui comme les viels legionaires de Cesar, ne et informoient jamais du nombre de l'ennemy, mais seulement ou estoit l'ennemy, ou si la breche estoit raisonable pour s'y donner, mais seulement, en quel quartier de la ville estoit.

"Bref, chacun se persuade avoir un Hippocrate, Aesculape, Podaire, ou machaon."

are denominated gastro-enteric; that all internal applications except the most bland mucilages are, in general, to be avoided until the inflammation has subsided, a result to be brought about by bleeding, general or local, but especially local, by leeches on the abdomen. Purgatives are irritants which must not be used until the inflammatory stage is gone by; even mild soups or broths are highly injurious, except where all the active symptoms are subsided. This doctrine, both as to its pathology and its therapeutical part, is so similar to that of the illustrious Baglivi, that the one may be regarded as the very mould from which the other is derived. Certainly the latter has the advantage of great perspicuity, and is infinitely fascinating and seductive by its unity and general applicability. If it should prevail, it might be regarded as one other among the thousand evidences we have of the difficulty of reasoning correctly in medicine, and of the necessity there is for a conjoint exertion of the powers which are undoubtedly possessed by medical men, to reform and redintegrate the scattered and dilapidated materials of the temple.

It will be perceived that we have paid but little attention, except to those chapters of Baglivi, which have a more immediate relation to the pathology of fevers. It was not our intention to examine at this time his physiological doctrines in the treatise de fibra motrice. His singular ideas concerning the agency of the membranes of the brain in the production of animal movements may come before us at another time. For the present we have sufficiently shown that his pathological views of fever were at least very similar to those of Dr. Broussais, and probably, the real sources from whence they are derived, though, in the hands of Dr. Broussais, they have been much augmented, systematized, and happily illustrated.

Article XIV.—"*Wilhelmi Ten Rhyne, M. D. Transisalano. Daventriensis, Dissertatio de Arthritide: Mantissa Schematica: De Acupunctura, et Orationes tres I. De Chemiæ ac Botanicæ Antiquitate et dignitate. II. De Physiognomia. III. De Monstris. Lond. Impensis R. Chiswell,* 1689. *8vo.*"

This is the title of a work which we believe to be very rare, because we think no edition has been printed, except the first one, one hundred and thirty-six years ago, and because few of the late writers on acupuncture make any mention of it, while those who do so, seem to derive their knowledge of it from VICQ D'AZYR. Mr. SARLANDRIERE, in his late work,* has only mentioned TEN RHYNE's name once, and then very slightly, in connexion with that of KEMPFER, though TEN RHYNE's account of acupuncture is abundantly clear and definite, and though he undoubtedly deserves the credit of having first laid the operation before the medical profession in Europe, to whom, as he justly says, it was "hactenus incognita."

It is not our intention to examine at length, in the present article, the whole contents of TEN RHYNE's volume, but shall limit ourselves to what relates immediately to acupuncturation. The propriety of republishing a copy of TEN RHYNE's aphorisms is not the less manifest because Mr. SARLANDRIERE has given us a whole Chinese tract on moxa and acupuncture, which was procured and translated by a learned Hollander, who resided eighteen years in Japan; at what exact period we are not informed, but we perceive he was there in 1782. The Chinese treatise is written by KANRA-FATJN-MOTO-SADA, who tells us in the proemium, that

> "In Nengo-ky-tjo, (from the year 1596 to 1614,) a certain Nagata Tokfon, an able physician in the province of Kay, studied the art under a skilful Corean or Chinese Doctor, KINTOKFO, and in his turn, taught it to the physician TANAKA FISIN, in order that every body might obtain a knowledge of it. It was, however, kept secret from the public, and was not communicated, except to some individuals who were thought fit to practice it.
>
> "As I was desirous of obtaining information, and as it is impossible to acquire a perfect knowledge of this art by oral instruction or the mere use of books, I applied myself to the study of it at Mijaco under the famous physician FARA TAYAN, and had the happiness to succeed completely in the whole matter, and have been fortunate enough to cure by my practice, a number of sick persons."

We hope none of our readers will feel their consciences pricked by the following display of motives in an unlettered and semi-barbarous Japanese; motives which might do honour to the most polished physician of any age or country.

> "Considering," says he, "that by keeping it secret, it might be compared to gold hidden in the mine, or to precious gems buried in the depth of the sea, so that no body could enjoy the use of them, and believing, moreover, that it is the duty of a philanthropic physician

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* Memoires Sur l'electropuncture. Paris, 1825. 8vo.

or surgeon to make public his knowledge, when it may contribute to preserve the life of his neighbour, I resolved to set down in this manner every thing important and curious in the practice of medicine, relative to acupuncture and moxa, in order that they may be known and applied to the benefit of the sick, in such cases as are proper."

The medical public is much indebted to Mr. Sarlandriere for his zeal in procuring and publishing this manuscript, and for the three representations of the Tsoe Bosi, which are found in his work. Ten Rhyne also gives us four representations of these figures, with the places marked out for acupuncture and moxa, but they are neither coloured or numbered.

The books of Medical Biography which we have consulted, contain no account of Ten Rhyne's life. We learn from his work, that he was employed in the medical service of the Dutch East India Company, and resided at Batavia, from whence his epistle, dedicatory, is dated January 30, 1679.

He went with a Dutch Mission to Japan in we know not what capacity, and resided while in that country, at Nangasaki, busily employed in collecting information concerning medicine principally.

The treatise de Arthritide is not at all interesting, except for his history of the use of moxa, and for a close similarity which is traceable between his ideas concerning what he calls flatus, which he supposed the offending cause in rheumatism, and some of the speculations of the French pathologists on the operation of electricity in the production of morbid affections. We, by no means, intend to intimate that he knew any thing concerning electricity and galvanism, but only that making use of another very active agent, his explanations are not widely different from those of our own era.

Ten Rhyne considers all rheumatic pain as arising from flatus,* accumulated in any given part. This flatus in his hands is not very different from the spirits of the ancients, or the nervous fluid, or electro galvanic movements of the moderns. If the flatus be generated in immoderate quantity, or improperly detained in any part, it produces tension and pain by its attempts to fly off—it puts every thing on the stretch. Acupuncture allows the flatus to escape, and thus dissipates in a moment, the causes of distress.

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* Ego vero præeunte medicorum antistite, extremum clauserim *agmen*, Arthritridem a solis Flatibus, &c.—p. 15.

In the proemium to the Mantissa, he informs us that

"In all painful affections of external parts which have continued for some length of time, the Chinese and Japanese make use of the remedies called acupuncture and moxa, and have certain rules of art and precepts, according to which they mark out the places which are to be burnt with moxa or punctured with the needle."—*Proemium.*

"These two (inustion and acupuncture) are primary operations among the Chinese and Japanese, by means of which they cure all pains. If they (the Japanese especially) were deprived of these they would be miserable, without hope of relief to the sick—for both these Nations execrate blood-letting, believing that in this operation both the healthy and diseased blood flows out together, in consequence of which the term of life is abbreviated."—*Proem.*

The Japanese Physicians keep in the vestibules of their houses wooden human figures, on which the places which may be acupunctured or burned with moxa, are neatly painted; and the author presents us with three copperplate engravings, representing these localities, the original of which he procured at some expense while at Nangasachi, by the assistance of the Japanese Dr. IWANANGA ZOKO. These figures, which are not badly drawn, are covered with dots, indicating the places to be selected in the two operations.

In his epilogue (he has an epilogue and a corollary to the treatise de acupunctura) he commends acupunctura *Europaeis incognita* to his medical brethren, and assures that it is of so much consequence to the Japanese, that it is become a particular profession; those who exercise it, being called *Farritatte*, that is, acupuncturers; but if the use of moxa, as is common, be a part of the professional acquirement, they are called *Farraxyts tensas*. The former are called Xinkieu by the Chinese.

We shall now proceed to translate the whole treatise de acupunctura, which is reduced to the form of aphorisms, accompanied and explained by notes. For greater convenience we shall number them, which TEN RHYNE neglected to do.

1st.—"The needle ought to be long, (*p*) sharp, (*q*) round, (*r*) with a rough handle; it should be made of gold, (*s*) rarely of silver, and never of any other metal."

(*p*) "In order that it may sometimes penetrate deeply, (*q*) enter easily, (*r*) and be turned or rotated with facility, which is easily affected with a round needle with a rough handle. (*s*) The best are made in the Island of Corea, and may be procured of excellent quality at Kio, or Miaco, the emporium of Japan. I do not think any particular skill is necessary for the fabrication of the needle, but probably there may be some secret in regard to giving it a proper temper."

2nd.—"The needle is to be introduced into the part affected, either by simply piercing it, or by rotating it between the thumb and fore-finger, or by slight strokes of the hammer, (*t*) according to the nature of the disease, (*u*) or the constitution of the part (*w*) to be punctured."

(*t*) "The hammer is of ivory, ebony, or any hard wood; its head is either smooth on both sides, or has small indentations, in which the top of the needle may be received, (when pressure is necessary;) its handle is hollowed out to serve as a case for the needle, which is secured therein with a silken string, or by a ring. (*u*) If the flatus be deep seated, it must penetrate deeper and e contra. (*w*) A hard skin is not so easily penetrated as a soft one; nervous parts are not to be so deeply punctured as fleshy ones.

3d.—"The needle must be *gently* pressed into the affected place, (*x*) except in some head affections, in which it should be forced even into the cranium; also in some affections of the wound (*y*) in which the uterus is to be pierced."

(*x*) "Unless circumstances forbid, it is generally to be inserted about the depth of an inch, (lati digiti) (*y*) particularly when the fœtus is restless and the mother very weak.

4th.—"The needle should be left in the part during the space of thirty respirations, (*z*) if the patient bears it well; if otherwise, it should be removed and re-inserted three, four, and even five or six times, if the patient bears it conveniently and the disease be obstinate."

(*z*) "This includes both inspiration and expiration, for this is the mode of computing time among the Chinese and Japanese physicians.

5th.—"This operation should be performed while the patient has an empty stomach."

6th.—"The puncture should be deeper if the disease be severer."

7th.—"Aged persons should be punctured deeper than young ones; adults deeper than youths."

8th.—"Such as are fat and fleshy, puncture deeper, and the contrary with such as are delicate."

9th.—"Acupuncture is most useful in affections of the upper and lower portions of the abdomen."

10th.—"Puncture the head when afflicted with cephalalgia, sopor, epilepsy, ophthalmia, and other infirmities arising from malign flatus."

11th.—"Puncture the abdomen, (*a*) in colic pain, dysentery, anorexia, hysteric affections, erupula, in pains of the limbs and belly."

(*a*) "Remarks on Bontius' account of acupuncture, lib. 5. Hist. Nat. we have not copied them.

"12th.—"Puncture the gravid uterus when the fœtus moves so violently before the full time as to give the mother dreadful pain, which often endangers her life. Puncture even the fœtus himself with a long and sharp needle, so that being frightened with the pricking he may desist from such great and dangerous movements."

13th.—"Nervous (*b*) places should be punctured less; (*c*) fleshy ones more deeply."

(*b*) "To wit, such as have any important nerves, tendons, or nervous ligaments immediately subjacent. (*c*) Because, in nervous parts, acupuncture is not only very painful but very dangerous, as taught in many places by Pare, Hildanus and others. On this account the Japanese use the needle in such places with the greatest circumspectness, scarcely pushing it through the skin, so that that common author of pain, (he means flatus) may be drawn out."

14th.—"Acupuncture should always be resorted to in the following affections, (according to my interpreter, Mottongi Sodaio,) videlicit, headach, vertigo, lippitudo, and suffusion of the eyes; apoplexy, cynic spasm, emprosthotonos, opisthotonos, *και τονω.* in convulsions of the nerves; epilepsy, gravedo, and rheumatism; intermittent fevers, as well as continued ones; hypochondriac melancholy; intestinal worms, and pain arising from them; diarrhœa and dysentery; colica passio particularly, and other affections of the bowels dependant on flatus; spontaneous lassitude, also arising from flatus; (*d*) swelled testicle; (*e*) arthitis; (*f*) and, finally, gonorrhœa."

(*d*) Is a comparison of this with the Hippocratic theory; (*e*) describes a swelling of the testicle, which is very common among the Japanese, who call it *sinki.* The testicle acquires an enormous size, so as to interfere with walking. It is cured by acupuncture. He says it is a morbus peculiaris; evidently not hydrocele or hernia: hernia humoralis may be the disease referred to. (*f*) Is not important.

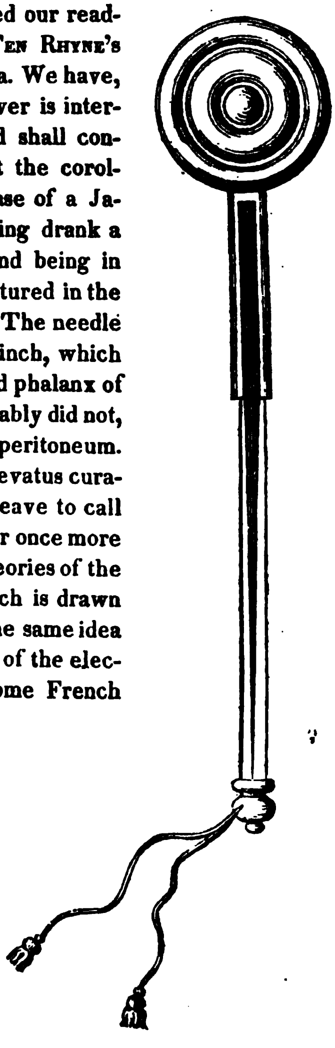
15th.—"In the foregoing complaints, puncture the parts in which disease commenced. This may be learned from the annexed schemata, but more exactly from experience."

16th.—"Such as are weak, may be punctured in the abdomen; such as are strong, in the back."

17th.—"When the pulse is scarcely or with difficulty perceptible, let the arms be punctured near the veins."

We have now presented our readers with the whole of Ten Rhyne's Aphorisms de Acupunctura. We have, also, before given whatever is interesting in his epilogue, and shall conclude in mentioning that the corollary contains merely a case of a Japanese soldier, who, having drank a quantity of cold water, and being in violent pain, was acupunctured in the left side of the abdomen. The needle was inserted a Japanese inch, which is measured by the second phalanx of the middle finger; it probably did not, therefore, penetrate the peritoneum. The author says, "hinc levatus curatusque evasit." We beg leave to call the attention of the reader once more to the similitude of the theories of the flatus of Ten Rhyne, which is drawn off by acupuncture, and the same idea concerning the dissipation of the electric fluid, as taught by some French writers.

Note.—We have subjoined an accurate copy of the hammer and needle represented in Ten Rhyne's book. A reference to his description will be sufficient for all purposes of explanation.



QUARTERLY SUMMARY

OF IMPROVEMENTS IN MEDICINE AND SURGERY.

In framing our first summary of improvements in the medical and surgical sciences, it has been our aim to make it as useful to the profession as possible, and with this intention, have admitted some articles, which, though of an early date in the past year, and familiar to many, are, nevertheless, of considerable interest, and entirely new to some of our subscribers.

Our German and Italian journals, not having reached us in time for the present number, we are unable to offer any thing of much value, in relation to the improvements in our profession in Germany and Italy. Our stock, also, of French medical news, though respectable, is not, owing to circumstances not under our control, as ample as we could have desired; but we have every reason to believe, from existing arrangement, that we need not apprehend similar difficulties in our subsequent numbers.

ANATOMY.

1. *The Skin.*—The late Mr. Chevalier, in his "*Lectures on the general structure of the human body, and on the anatomy and functions of the skin,*" has some observations of interest. On examining the cuticle, with a microscope magnifying one hundred and forty times, on a ground of dark-blue paper, he was unable to discover any pores, but those which were evidently passages to the hairs. In seeing even these, he has been more successful than Beclard. (Additions to Bichat. Art. Epid. Syst.) The under surface, however, was formed into an infinite number of what he calls *velamina*, regularly arranged, of exquisite tenuity, presenting a follicular appearance, and separated from each other by intersecting bands of a thicker substance. In these follicular cavities, according to Mr. Chevalier, are contained minute villi, or *penicilli*, supported upon a fine, vascular network, covering the surface of the cutis. From these, he supposes the perspiration to be effused, and to traverse the substance of the cuticle, which is spongy, to admit of this process.

The rete mucosum, he acknowledges to have an existence in the white as well as in the black subject; and states that he has repeatedly separated it.

Of sebaceous glands, he describes two sets; one immediately beneath, and closely adherent to, the inner surface of the cuticle; the other beneath the rete mucosum. Mr. CHEVALIER, in this, differs materially from the latest writers, who consider these organs as mere follicles, and not glands. Mr. PLUMBE, in a later work on the same subject, expresses a belief, that what Mr. CHEVALIER took for glands, was a series of little masses of sebaceous mucus, adhering to, and filling up, the orifices of the *sebaceous follicles*.

2. *Malformation of the Heart.*—Doctors VAN HALL and VROLIK, of Amsterdam, have published an instance, in which an infant, possessing all the usual attributes of a "*blue child*," died at the end of the second year. The right ventricle was greatly increased in thickness, which had enabled it to overcome the following very singular impediments. The large and more conspicuous artery, which resembled the pulmonary, was closed at its origin, by a tough, strong membrane, yet retaining marks, however, of the tricuspid valves. It proceeded, then, to the arch of the aorta, sending two branches, in its course, to the lungs. These viscera, could thus be only supplied with blood, in the retrograde direction, from the arch of the aorta. Besides this obstructed *pulmonary artery and ductus arteriosus* in one, there was another tube, less conspicuous than the former, arising from the right ventricle, and proceeding directly to the aorta, along the one previously described. The lungs were small, and received but little blood. The general symptoms of a *blue child*, were obviously explained, by the mixture of arterial and venous blood in the aorta.

3. *Mummy.*—We concluded that we could, with most propriety, notice, under this head, the curious description of a mummy, given by Dr. A. B. GRANVILLE, to the Royal Society. We have heard, before now, that *all* our modern bandages were found on the ancient remains; and we have heard this particularly predicated of one recently brought to this city, which, however, was not entirely stript. That the Egyptians attained high perfection in the art of bandaging, is evident enough; but we object to the extravagant language used in speaking of them. Those who have examined them, have not enumerated all the modern bandages; and we are not to suppose that dressings, invented for particular application to disease and injury, should be all employed for the mere purpose of enveloping a mummy. Of some of these, it is impossible. Thus, have they found that THILLAYE's bandage for the *amputated* shoulder-joint, is, in fact, any amputation bandage? Have they found the clavicle apparatus of BRASDOR, DESAULT, BOYER, CHAPEL, ASTLEY COOPER, &c. &c., or the fractured jaw roller of our countryman, Dr. RHEA BARTON? In short, the statement is an absurd one.

The viscera of this mummy had been torn to pieces, and partially extracted through the anus; which had been enlarged by several incisions. The front of the abdomen was not opened, as described by HERODOTUS. Dr. GRANVILLE was able to dissect, and recognise, with accuracy, portions of the stomach, the spleen, the left kidney, capsula renalis, and ureter; the three last exhibiting *diseased adhesions;* an adhesion of the stomach to the diaphragm, the uterus and its appendages, part of the cœcum, the appendicula vermiformis, and several other fragments of the intestines; several large pieces of the peritoneum; the gall-bladder, and nearly all the muscles of the pelvis; the latter in high preservation. Myrrh, resin, bitumen, and argillaceous earth, were thrust up the dilated anus, in large fragments.

The pelvis is described as an uncommonly fine one. The head exactly resembled that of a fine Georgian female, given by Blumenback, (Deca 3tia craniorum.) as one of the best specimens of the Caucasian race.

We avoid more detail, from the want of room; but we thought this completion of a dissection, began by the priests of three thousand years ago, might possess some interest for our anatomical readers.

PHYSIOLOGY.

4. *Acid in the human stomach.*—Dr. **Robert James Graves** has published, in the Dublin Transactions, a series of chemical experiments, made on the highly acid fluid discharged by a patient, in a violent periodical vomiting. It was so acrimonious as to excoriate the mouth and throat. Dr. **Graves** proved, to his own satisfaction, that this was owing to the presence of *lactic acid.* This agrees with the observations of **Chevreuil**, but by no means so with the subsequent ones of Dr. **Prout**, in the Philosophical Transactions; who, by a careful series of observations, conceives that he has proved it to be the *muriatic.* We thus see our old uncertainty of the nature of this substance, far from promising a speedy disappearance. Are we not at liberty to infer, that different acids are produced in different cases, particularly in disease?

5. *Influence of the par vagum in digestion.*—MM. **Breschet** and **Milne Edwards** have published a memoir, in the "*Archines Generales,*" in which they consider themselves as having proved, in a satisfactory manner, the propositions which we subjoin. We have not, at present, time or space to enlarge upon this curious, important, and, it appears, still unsettled question. Our readers will observe, that the results given, differ materially from those of Dr. **Wilson Philip**, who believed that the section of these nerves *vitiated the secretions* of the stomach, while it suffered the *muscular action still to go on.*

"1. That the division of the nerves of the eighth pair, considerably retards the transformation of the aliments into chyme, without arresting it.

"2. That this retardation of the digestive process depends upon deficient action of the muscular fibres of the stomach.

"3. That the vomitings which often follow the section of these nerves, are owing to paralysis of the muscular fibres of the œsophagus.

"4. That the re-establishment of the digestive process, after the division of these nerves, by means of electricity or galvanism, depends not upon the chemical action of this agent, but is owing to its exciting the movements of the muscular coats of the stomach, necessary to the renewal of the surface of the alimentary bolus, and to the placing successively, all the parts composing it, in contact with the parietes of this viscus.

"5. That, by means of a mechanical irritation of the inferior extremity of the divided nerve, similar effects to those produced by galvanism, are occasioned, but somewhat less marked.

"6. Finally, that the chief function of the pneumogastric nerves, considered only as forming a part of the digestive apparatus, is to preside over the movements of the stomach: movements which accelerate digestion, by facilitating the contact of the gastric juice with the different parts of the alimentary bolus.

Dr. Wilson Philip, in reply to Messrs. Breschet and Edwards, as above.

We have inserted, above, the conclusions of these last experimenters. Dr. Philip comments on them thus, in the October number of Johnson's Medico Chirurgical Journal.

" Conclusion 1. This operation, certainly, can have no effect in preventing the action of the gastric fluid, secreted before the operation, and which has accumulated in the stomach. But, from the facts, that, the longer the animal lives after the operation, the less undigested food is found in its stomach, and that, if it survives long, the undigested food alone remains in it—points we have ascertained by many trials, and from experiments made on the newly dead animal, which are related in my treatise on the vital functions, it appears that the secretion of gastric fluid is immediately arrested by this operation.

"2. In our experiments, we always found that the stomach discharged its digested contents into the intestine, as readily after as before the operation.

"3. We always found, that the function of the œsophagus was as well performed after, as before, the division of the nerves, the animal continuing to swallow with the same ease as in health.

"4. I have just had occasion to remark that we always found that the stomach discharged its digested contents into the intestine, after, as before the operation. Indeed, if the stomach and bowels be wholly removed, even in the newly dead animal, and thus, all their nervous connexions destroyed, their peristaltic motions continue for some time unimpaired."

To the fifth conclusion of MM. Breschet and Edwards, Dr. Philip replies, that M. Cutler repeated "the experiment from which this inference is made," on a rabbit, for eight hours; making "the mechanical irritation, employed by" those gentlemen; and that the food was afterwards examined by Dr. Philip and M. Brodie, and found "just in the state in which it was swallowed."

6. Dr. Philip continues, "The reply to this statement is made in what is

said of the second and fourth statements."—*Johnson's Med. Chirurgical Journal, October.*

6. *Effect of disease in the nerve of the fifth pair, in abolishing the exercise of the senses in one-half of the head.*—M. Serres, who has gained himself so much credit, for his profound researches into the comparative anatomy of the brain, reviewed in our present number, has published a singular case, in the Bulletin de la Société Philomath.; in which the above singular phenomenon took place.

A young man died of epilepsy, under the care of M. Serres. In addition to his epileptic fits, he had, first, *inflammation* in his right eye, terminating in *opacity of the cornea,* and destruction of sight. The eye, eye-lid, nostril, and one-half of the tongue, were successively (the order not given,) deprived of sensibility. Next, a *scorbutic affection* laid bare the [roots of the] teeth, on the right side. Finally, complete deafness took place in the same side. The whole process occupied ten or eleven months. The muscular powers remained unaltered.

The ganglion of the fifth pair on the right side, was found swollen, of a yellowish colour, and less vascular than usual. The nerve was also changed into a similar substance, from the ganglion to its origin, at the side of the *pons varolii,* and fibres of the same texture were seen penetrating the pons.

The dissection was made in presence of Magendie, Serres, Lisfranc, Georget, and several students.

Our readers, probably, have all heard, by this time, of the startling experiments of Magendie, directed to call in question the commonly alleged functions of the *optic, olfactory and acoustic nerves.* M. Magendie had shown, that perceptions of pungent odours were demonstrated in birds, in which the first pair of nerves was divided. This could only be attributed to the branches of the fifth pair. Within the last year, experiments have been made, which go to show, that the integrity of the fifth pair is necessary to the complete performance of either smell, sight, or hearing. We have, at present, neither space nor materials to enlarge further.

7. *Structure of the nerves.*—M. Bogros has succeeded not only in injecting, with quicksilver, the neurilematic tubes, which contain the nervous medulla, but in demonstrating that the medullary matter itself possesses a tubular arrangement. Thus, by inserting the point of his injecting tube into the centre of a nervous fibril, after having corroded and removed the neurilema, with nitric acid, he was able to pass the quicksilver through all the minute anastomosing fibres of which the nerve is composed. These unite their cavities at the plases of anastomoses. Ganglions were injected, and then traversed, by the fluid metal; the latter filling other nervous fibres after passing through them. M. Bogros passed mercury, from the inferior cervical nerve, into the cardiac plexus, through ganglions of the great sympathetic, through the ganglions at the roots of the spinal nerves, &c. In these last, the mercury entered the veins; insinuating itself, first, into the

minute venous plexus, which lies between the proper substance of the ganglion, and the coat which they derive from the dura mater. It thus ran, in one instance, as far as the heart; but was never found in the arteries or lymphatics. After leaving these ganglions, it passed into the roots of the nerves, and then immediately escaped into the spinal cavity; whether through ruptures or natural openings, could not be ascertained.

From the little we have seen of this discovery, we should presume these cavities to be similar to the ventricles of the brain.

8. *Semidecussation of the optic nerves.*—Dr. **Andrew Crawford**, of Winchester, has published, in the London Medical and Physical Journal, an account of a case, confirming the observations previously published by Dr. **Wollaston**, on the effects of a palsy of the optic nerve, above its semidecussation. A female had a slight hemiplegic attack, on the *left* side, accompanied with total loss of sight in the *right* half of each retina. Objects held before her, were distinctly seen on the right side of a middle line, but were entirely invisible on the left.

The injury having been sustained by the *right* side of the brain, may be presumed to have affected the nerve on the right side, above its semidecussation. We thus have paralysis of the *left* side, accompanied by injury of the *right* half of the apparatus of vision. But, instead of losing the sight of the *right eye*, that of the *right half of each retina* was destroyed; thus, by the inversion of the figures of objects on the retina, preventing the vision of all objects on the *left* side of the middle line of the eye.

9. *Sensibility to touch, of the nerves of vision.*—M. **Magendie**, at a recent meeting of the Institute, stated verbally, that he had touched the retina, in three cases, without producing any pain. He found, by repeated experiments on animals, that this part may be pressed, pricked, or torn, without pain being evinced.—*Lond. Med. and Phys. Journal.*

10. *Function of the portio dura.*—Mr. **Charles Billard** has published the case of a woman treated in the hospital at Angers, for consumption and for a large scrofulous ulcer of the right parotid gland, and its vicinity. A palsy of all the moveable parts of the right side of the face ensued; and, after death, an inch (French) of the trunk of the portio dura was found destroyed; extending from the stylo-mastoid foramen, to the top of the masseter muscle.

The nature, extent and peculiarities of the paralysis are not given; so that we cannot judge of the accordance of this case with the principles laid down in such a luminous manner, by Mr. **Charles Bell**. The writer should have informed us whether the paralysis was total, or confined to the motions associated with respiration.—*Jour. Med. de la Gironde.*

11. *Functions of the Anterior and Posterior halves of the Spinal Marrow, and of the corresponding Roots of the Spinal Nerves.*—M. **Bellingeri**, whose work on the Spinal marrow was recently reviewed in our city, has read a paper to the *Academy of Sciences of Turin*, in which he considers him-

self as having proved, by experiment, that the posterior roots of the spinal nerves relate to the functions of *sensation* and the extension of the limbs, and the anterior to flexion of the limbs only. When the posterior roots were divided, *sensation* in the limb supplied by them, *was lost*, and the part fell into a state of permanent *flexion*; to which it constantly returned, when interrupted by the hand. When the anterior roots were divided, permanent *extension* was produced; which recurred in the same manner, when interrupted. When the posterior half of the medulla was divided in the loins, but above the plexus of nerves which goes to the posterior extremities, extending the incision to the gray matter, in the centre, and from one lateral fissure to the other, the motions of *extension* in the hind legs were lost, but the sensibility continued. This last result our author attributes to the circumstance of the gray matter in the centre of the medulla remaining untouched: as he supposes this to be the seat of sensibility.

The experiments were made on lambs.

Our readers will observe that these results, here described, are not exactly the same which are said to have been obtained by MAGENDIE, in similar trials. And, in fact, to our comprehension, this is precisely the most bewildering part of physiology.—*Bulletin des Sciences Med., par Ferussac.*

12. *Non-communication between the Circulation of the Fœtus and the Parent.* MM. PREVOST and DUMAS have found the globules of the chick, extracted from the egg, to differ in size and form, from those of the adult animal. Encouraged by this discovery, M. PREVOST repeated his microscopic observations upon the goat. He here found the globules of the fœtus *twice the size* of those of the adult. Of course, there can be no mixture of such dissimilar fluids in the circulation. If the analogy extend to man, it solves a question which has given rise to much discussion.—*Bulletin des Sc. Med.*

13. *Dissection of a Hydrocephalic Head.*—Dr. SPURZHEIM has dissected, in company with Messrs. MORGAN and KEY, surgeons to Guy's hospital, London, the head of a man of thirty years of age, named Cardinal, who is figured in Dr. SPURZHEIM's Physiognomical System, (pl. 5, fig. 2.) as an example of enlargement of the skull from hydrocephalus. Messrs. MORGAN and KEY found about *nine pints* of water between the brain and dura mater, and *one pint* in the lateral ventricles. Dr. SPURZHEIM was then invited to assist. The brain lay in the bottom of a cranium, which had measured in 1815, over the integuments, thirty-three inches in its greatest circumference, twenty-four and a half inches from ear to ear, over the top, and twenty-three and a half inches from the root of the nose to the back of the neck. The *corpus callosum* was split along its raphe, leaving the two halves entire on the sides of a great opening, by which the ventricles communicated with the space between the brain and the dura mater. The lateral ventricles were most distended in the posterior lobes; and, on the right side, several convolutions were unfolded into a membranous form, in the manner described by Dr. SPURZHEIM. Those of the left presented the

usual appearance. The convolutions which usually lie in contact with each side of the falx, were turned so as to face upwards.

Anterior and middle lobes of the brain, nearly natural; olfactory nerves large; optic small; lower half of the corpora quadrigemina small; cerebellum flattened; its cineritious substance very dark.

The brain weighed two pounds fourteen and a half ounces.

The man, when described by Dr. Spurzheim, in his work, could read and write tolerably well, and manifested all the natural sentiments and intellectual faculties.—*Quarterly Phrenological Journal, No.* 7.

14. *Alterations in the saliva from the use of Mercury.*—Dr. Bostock has analyzed the saliva of a patient labouring under a mercurial salivation. It appears that this fluid is chiefly changed, in being converted from a mucous to a serous or albuminous nature. The *exhalations* of Bichat, *transudations* of Dr. Bostock, are albuminous, and appear to differ from the serum of the blood, mainly in the *proportion* of the albumen they contain. The salivary glands, then, were approximated, by the mercurial stimulus, to the condition of exhalants, instead of an apparatus of a more elaborate secretion.

Dr. Bostock, with the most delicate tests, did not find any mercury in the saliva.

In two cases of inflammation of the stomach, a similar change was found in the mucus ejected by vomiting.

In a case of catarrh, different results were met with; but the account before us is too abridged to enable us to give a satisfactory statement of the difficulty.—*Lond. Med. and Phys. Journal, October.*

15. *Inflammation of Nerves.*—M. Martinet, in the Revue Médicale, has published a number of cases to prove, that in *neuralgic* affections, (tic douloureux,) the nerve or neurilema is seldom inflamed or changed in an organic manner. He has given ten strongly marked cases of nervous inflammation. In every case where dissection was performed, and the parts brought into view, more or less redness of the nerves was found; evidently dependent on injection of the vessels of the neurilema. Partial ecchymoses, or sero-sanguineous infiltrations were also generally present; and, in some instances, traces of suppuration. Generally, the nerves were augmented in volume; rarely softened in texture. The symptoms were more or less extensive diminution of their functions, pain, either of a lancinating or benumbing kind, *never suddenly intermittent,* but generally continued, with occasional exacerbations and remissions.

The treatment, of course, is antiphlogistic.

The suddenly intermitting and recurring pains, called tic douloureux, M. Martinet considers as not inflammatory.—*Medico Chir. Journal.*

16. *Circulation of the blood.*—Dr. Barry, in a memoir on the motion of the blood in the veins, has come to the conclusion that the blood in those vessels, and the fluids in the lymphatics, follow the dilatation of the cavities of the thorax in inspiration, on the principle of vacuum. The subject is in the

hands of a committee of the Royal Academy of Sciences of Paris.—*Lon. Med. Rep. Sept.* 1825.

PATHOLOGY.

17. *Pathology of tetanus.*—Mr. Joseph Swan, of London, has lately published "An essay on Tetanus, founded on cases and experiments," in which he endeavours to prove that this disease depends on an inflammation of the ganglia of the sympathetic nerves. He inflicted severe wounds on animals, or administered to them the nux vomica, and on killing them, found these ganglia in a state of inflammation. He likewise found the same parts similarly affected in several individuals who died of tetanus. He regards the affection of the brain and spinal marrow as secondary, and as produced by the irritation above alluded to. Whether this new *theory* will prove correct or not, it is difficult now to say. Sure it is, that in a practical point of view, we gain little by it.

18. *Boiling a woman alive.*—M. Teallier has inserted the following case in a Parisian journal. Madame L., aged twenty-eight years, consulted a quack, for a chronic rheumatism. The man of art directed her to enter a warm bath, and raise its heat gradually to near the boiling point. This sagacious advice was complied with. The poor lady, after the process had endured for some time, became insensible; her skin became black and bloated; convulsions, grinding of the teeth, and foaming at the mouth, soon followed. M. Teallier relieved these cerebral symptoms by a free bleeding, and the woman recovered her senses. Pain was then felt in the epigastrium, and was removed by forty leeches. Next day it recurred round the umbilicus, and here gave way to twenty leeches. She was not long in recovering her health; but, six weeks after, the whole epidermis separated from her body, without the least pain.

We consider this a very curious case. Our readers will probably think of the "high steam practice" of the State of New York. But it allows us to ask, whether this does not explain some of the cases of apoplexy from heat, in our summer months; and whether these may not arise from the general application of heat to the whole body, as well as to the head in particular.—*Journal Med. de la Gironde.*

19. *Tumour of the rectum.*—Dr. A. L. Peirson, of Salem, Mass., has inserted in the New York Medical and Physical Journal, for September, 1825, a case of a gentleman, affected four years with symptoms attributed to hæmorrhoids. There were pain in the back, difficulty of passing his stools, and a discharge of blood per anum, sometimes very profuse, and followed by relief; as well as occasional attacks of severe pain and constipation, which were relieved by opium and powerful cathartics. In April last, he died, having had no stool for the last twelve days. His stomach had

never become irritable, and his appetite and capacity to take food remained to the last.

Dissection, eighteen hours after death—Abdomen very tumid; a large amount of flatus; intestines betraying "a few streaks of inflammatory action," [redness.] The colon prodigiously enlarged, being equal in size, throughout its whole length, to the stomach; adherent to the liver, omentum, and stomach. The internal surface of the cæcum and colon, natural. In the rectum, a mass of soft, fungous excrescences, resembling papillæ, was found completely obstructing the cavity, as with a sponge; and extending from about two inches above the anus, for four inches higher up. If we understand the author correctly, this was a "morbid alteration of structure" in the substance of the rectum, perhaps its lining membrane. (In our copy of the number, the plate was omitted.) Dr. P. remarks, that it was singular that there should be so little inflammatory action and sympathetic derangement of the stomach.—*N. Y. Med. & Phys. Journal.*

20. *Epidemic erysipelatous fever.*—Dr. Fountain has published an account of an epidemic which prevailed in West-Chester and Putnam Counties, New York; in which erysipelas on different parts of the skin and in the fauces prevailed at the same time, frequently to the destruction of life. He derived his best success from emetics, sudorifics, and mild laxatives; but was not unfrequently obliged, from the long duration of the disease, (as far as the tenth or twelfth day,) to have recourse to ammonia and oil of turpentine, as internal stimulants. The whole paper, with some quaintnesses, contains much interesting matter; and must be valuable to any one who studies the epidemics of our country.—*Ibid.*

21. *Asthma from omitting the use of opium.*—This is said to take place in some parts of Hindostan, with extreme breathlessness and all the other symptoms of an asthmatic paroxysm, and to such a degree, that, if not removed by the timely exhibition of a sufficient amount of opium, it proves fatal in a few hours. Our authority is Mr. Henderson, in the Edinburgh Medical and Surgical Journal, for July.

22. *Mean duration of intermittent fever.*—M. Bailly has read a memoir on this subject, before the Royal Academy of Sciences. From a great number of observations, collected in different climates, such as Rome, Montpelier, Lyons, and Canada, he assigns a mean duration to this disease of *fourteen days.*—*Lon. Med. & Phys. Journal, Sept.*

23. *Hydrophobia.*—Professor Rossi has published a case, in which a young man was bitten by a cat, which afterwards had all the symptoms of rabies. Two of the wounds were cauterized twice, and a third once,—the patient directed to take vinegar and the genista luteo-tinctoria, internally; of the last of which he took a glassful night and morning. The sublingual glands were carefully examined, that any change in them might be detected.

In about six weeks, the patient began to be melancholy, to seek for solitude, and to weep violently. His sleep was disturbed by frightful dreams, his appetite failed, and he disliked his wine, of which he had before been very fond. He afterwards said, that his aversion to water was at that time equally strong. His eyes glistened, his face was red, and his mouth was always full of saliva. The left sublingual gland was larger than the right; and an itching was felt in the part bitten.

The sublingual glands were each submitted to three successive severe applications of the actual cautery. This produced much fever and distress, and required much attention. The patient ultimately recovered his health entirely.—*Ibid.*

Our readers will judge whether this be made out a case of hydrophobia. It does not satisfy us; as we apprehend that all the symptoms described were not only liable, but likely, to be produced by fear.

Vesicles in hydrophobia.—In the same number of the London Medical and Physical Journal, is an account of the dissection of a dog, who died with many of the symptoms of this disease, though not with any horror of water.

On each side of the frænum linguæ, were found longish bodies, "pointed anteriorly, and posteriorly extending to a level with the first molar tooth; the parietes of this swelling, dry and injected, were swollen in the middle, so as to resemble a barley-corn; the posterior extremity had, towards its termination, a small aperture, analogous to the opening of a dilated follicle. This vesicle contained a little yellowish liquid, of a tolerable consistence; within it, two ulcerated spots were observed, covered with a matter, the colour of milk." Other peculiarities were found, which we do not stop to enumerate. These circumstances are related by Mr. **Antonio Soares**, in the *Annali. Universi. June.*

24. *Hydrophobia.*—In a case published by Dr. **Brandreth**, the whole nervous system, as far as examined, appears to have been in a state approaching or amounting to inflammation.—*Johnson's Med. Chir. Journal, Oct.*

25. *Idiopathic Fever.*—Two cases are given, in addition to a great number already on record, by M. **Martinet**, from the practice of Dr. **Recamier**, at the Hotel Dieu, in which, after death from fever, and, in one instance, with delirium; no marks of disease were found; either in the alimentary canal or the membranes of the brain. Our readers may be aware, that the disciples of **Broussais** have an answer ready for all statements of this kind; viz.: that the phenomena had disappeared after death, as is the case with erysipelas and other cutaneous eruptions, as well as some observed in the throat.—*Med. Chir. Review, Oct.*

26. *Irritation of the Stomach in Phthisis.*—M. **Andral**, jr. has found, during five years' observation, at La Charite, under L'Herminier, that, in three cases out of five, patients who died of consumption, exhibited unequivocal marks of disease of the stomach. The læsions were as follows: 1. Vivid injection of the capillaries, especially about the great curvature: not a mere settling of the blood. 2. A *brownish tint*, generally with thickening, and some hardening. 3. Most frequently of all, a softening of the mucus membrane

of the stomach, in various degrees; sometimes accompanied by redness; sometimes by paleness of the part. 4. Ulceration; but this very rarely. 5. Still more rarely, an alteration of texture in the subjacent parts, consisting of thickening, induration, or tubercles. The softening of the mucous membrane, here described, has been recently introduced to notice, by M. Louis, who has proved, to his own satisfaction, as well as that of Broussais' school, generally, that this is an effect of inflammation.—*Ibid.*

27. *Intestinal Calculus.*—M. Torbert, of Paisley, Scotland, has had a case, in which three concretions were found in the colon. During life, there were frequent, thin, watery stools, sometimes yellowish, sometimes whitish. He ate little, and was always thirsty. He had, occasionally, pain in his belly; and, sometimes, felt a hard lump there: was emaciated, and stunted in his growth. It was composed of earthy crystalline matter, intermixed with vegetable fibres. Dr. Duncan, who saw the case, advises against *the use of oats.*

The author of this note has, in his possession, a concretion, from a horse, weighing nearly fourteen pounds; and which appears to be composed principally of the fibres of the animal's oats.

28. *Needles travelling through the human body.*—Drs. Otto and Hecholdt, of Copenhagen, have published the case of a young woman, in which four hundred needles were extracted from different parts of the body!! The symptoms which prevailed, with various intensity, from August, 1807, to December, 1823, were, violent cholic, erysipelas, fever, hysteric fits, followed by fainting, epilepsy, drowsiness, hiccough, delirium, long fits of theatrical recitations from tragic poets, hæmatemesis, constipation, ischuria, retention of urine, purging of a black matter, stupor, and a large carbuncle on the thigh. In January, 1819, a large tumour was opened, below the umbilicus, and a needle extracted. After this, the enormous number we have mentioned above were removed, issuing from all parts of the trunk of the body. The last was removed in December, 1823; and she was living, in July, 1825, at Frederick's Hospital, Copenhagen, in good health.—*Ibid.*

29. *Ophthalmia.*—M. De Kirckhoff has examined minutely the facts and circumstances, as to the contagious, or non-contagious nature of certain species of ophthalmia; and is convinced, "that this ophthalmic contagion is transmitted in no other way, than by the application of the secreted matter from the diseased eye to a healthy eye. I have placed ophthalmic patients in the same beds with the wounded, with venereal patients, &c., and have never seen an ophthalmia result. But I have inoculated different individuals with this matter, and although I merely touched the edges of the lid in such a way, that the matter should not act as a foreign substance in the eye, yet an ophthalmia resulted at the expiration of one or two days."—*Journal Complémentaire, April,* 1825.

PRACTICE OF MEDICINE, THERAPEUTICS, AND MATERIA MEDICA.

30. *Hydrocephalus internus.*—Dr. FISHER relates a case of hydrocephalus cured by mercury, which is interesting in itself, and also as demonstrating the propriety of continuing to exert all the faculties we possess, even in the most hopeless cases. Dr. F.'s patient was a boy, aged seven years. Leeches to the head, and a very free use of calomel, did not prevent him from becoming profoundly comatous, and remaining so during thirteen days, which brought him to the twenty-fifth of the disease. During the existence of this coma, half a drachm of ung. hydrarg. was rubbed on the hypochondria, night and morning. On the thirteenth day of the coma, some effects of the mercury were discerned in the mouth; the pupils began to be sensible to the stimulus of light; the pulse improved; the stools, which were green and "spinachy," assumed a healthier, yellow colour; and the patient, gradually losing the coma, recovered entirely.—*Ed. Med. & Surg. Journal, July,* 1825.

Dr. DAVIS, in an essay on Meningitis, says, "This disease has been usually called *acute hydrocephalus;* but there is no more reason for calling inflammation of the investing membranes of the brain by such a name, than there would be for calling that of the pleura, acute hydrothorax, or that of the peritoneum, acute ascites." Dr. DAVIS frequently found one ounce or one ounce and a half of fluid, within the crania of subjects who had no symptom of cerebral affection; while he found as little as three drachms, in such as died of meningitis; even less is found on some occasions. He thinks that inflammation of the membranes may, according to its *degree,* produce effusion of coagulating lymph, of sero-purulent matter, or of serous fluid. Hydrocephalus he regards as a slow disease, and the term should be applied accordingly; while the term Meningitis should be used for the acute affections. This gentleman, who has examined some hundreds of cases, remarks, that he has never seen inflammation of the *brain.*

Extensive bleedings, he thinks, are improper; the relief which follows such, is generally short-lived, and the patient is found worse after each one. Moderate bleedings are beneficial; that which is effected by leeches is the most useful. Calomel is the only internal remedy which has produced any decided effect. He frequently gives it to the amount of half a drachm a day. To a patient not more than ten months old, he gave from four to six grains every third hour, during nine days. He lays much stress on the use of large doses, and regards the treatment as very successful when conducted on this plan.—*Lon. Med. Rep. Jan.* 1825.

31. *Tartar Emetic in Pneumonia.*—The practice of giving large doses of tartar emetic, has been employed by Mr. WILLIAM WOOD, in a case of pneumonia.

This gentleman used the lancet with much good effect. The patient was aged thirty-four years. After losing thirty ounces of blood, he swallowed thirty grains of tartar emetic, followed by a similar quantity in two hours. No vomiting followed. In six days, he took in all about one hundred and twenty grains; and recovered very well, assisted, as he was, by blisters and purgatives. As to the practical efficacy, this case proves nothing: it proves no more, than that very large doses of this violent emetic may be borne. Mr. **Wood's** practice was too complicated, (we should say, too judicious,) to afford in this case a fair sample of the unaided powers of tartar emetic. The patient's recovery is, doubtless, due to the *whole treatment*. Mr. **Wood** found that very large sweats were produced by the medicine, and attributes much of its efficacy to that circumstance, in which he differs from the Italian teachers.—*Ed. Med. & Surg. Journal, July*, 1825.

32. *Anthrax cured by antiphlogistics.*—Dr. **Auguste Perrez** has lately applied, with the most striking success, the principles of the French physiological school, to the treatment of anthrax. The patient was a lady, thirty-nine years of age, of a sanguine and nervous temperament. She was taken suddenly with acute pain on the middle and superior part of the thigh. When the Doctor saw her, (second day,) the system was violently affected, the pain excruciating; the diseased part about two inches and three-quarters in diameter, nearly black, and covered with vesicles containing a brownish ichorous matter. The thigh itself was dreadfully swollen. Leeches in large numbers were applied, and the blood allowed to flow; complete abstinence from solid or liquid food was ordered, and gummy and acidulated drinks administered.

On the second day, the patient was better; but pain still continuing, leeches were again resorted to, and poultices applied to the part affected.

Under this treatment, the eschar was gradually detached, the swelling diminished, and the pain was calmed. From some cause or other, the disease and granulating surface became inflamed; leeches were again applied, and in a few days the wound was completely healed, and the patient recovered. Mr. P. recommends the surface of the wound to be lightly touched with the nitrate of silver, or some other caustic, as soon as the granulations have risen to a level with the skin. The present patient, however, would not submit to this operation, and recovered perfectly, notwithstanding.—*Annales de la Médecine Physiologique, Juillet*, 1825.

33. *Malignant intermittents.*—Mr. V. **Francois**, of Mons, in France, has lately published some cases of intermittent gastro-enteritis, arachnitis, cerebral congestion, gastro-entero-cephalitis, and one case of arachnoido-cephalitis, furnished him by Dr. **Ponta**, of the same place. In all these cases, the depletive practice was adopted during the paroxysms, and carried, in some cases, to great extent; and the bark or sulphate of quinine was administered during the apyrexia. General bleeding was resorted to in several of the cases, and a large number of leeches were applied near the parts affected.

M. Francois has thus refuted the assertion of some, that the greatest caution is necessary in employing blood-letting, &c. in the malignant intermittents of some authors, on the plea, that the local symptoms of inflammation, in those cases, are deceptive, and indicate a *nervous* derangement, requiring a different treatment.—*Ibid.*

34. *Chronic Pneumonia.*—Professor Nasse, of the University of Bonn, suggests the propriety of having recourse to the incision of the thoracic parietes, in cases of chronic pneumonia, in order to evacuate the products of the inflammation. He has actually performed that operation in a case of phthisis, accompanied with difficulty of expectoration. The lung was found solid, was incised to the extent of two lines, and a tent introduced into the wound. A few days after, a large quantity of ichorous matter was discharged. Relief was thereby obtained; but the wound healed up, and the disease was once more aggravated. It does not appear that the patient was much inclined to submit again to this *innocent* operation; as he placed himself under the care of another physician.—*Journal Complémentaire, May,* 1825.

35. *Tetanus cured by antiphlogistics.*—M. Cheron has cured a case of tetanus, by means of evacuations of blood. Similar affections have likewise been removed by the same means, under the care of MM. Paradis and Paul, of the army.—*Journal Universel, May,* 1825.

36. *Mackenzie on croup.*—Dr. Mackenzie of Glasgow proposes to assist the cure of croup by means of nitrate of silver, employed as a wash to the fauces. Croup arises from inflammation, which causes the deposition of coagulating lymph in the form of membrane. This secretion often is observed as far up as the tonsils, uvula, &c. A camel hair pencil dipped in a solution of twenty grains of nitrate of silver in one drachm of water, and applied to the tonsils, uvula and the posterior parts of the fauces, generally causes them to throw off the false membrane; and as the diseased surfaces within the larynx are continuous with these, the same action is extended so as to effect the detachment of the croup membrane therein. He recommends that the pencil be freely thrust in the fauces once or twice a day, according to the severity of the disease. No bad consequences have occurred, in his practice, from this method.—*Vide Ed. M. & S. J. April,* 1825.

37. *Tic Douloureux.*—Dr. Borthwick relates three cases of neuralgia or tic douloureux cured or much mitigated by the exhibition of carbonate of iron, in doses of one drachm, thrice a week; one drachm thrice a day, and one scruple three or four times a day. Dr. B. considers it "now almost a settled point in practice, that iron will relieve, if not cure, tic douloureux (neuralgic affections, generally speaking,) as certainly and speedily as quicksilver, in particular forms, will relieve and *cure* lues venerea."—*Ib.*

R. Rankins relates the cure of four cases of neuralgia by the exhibition of the same remedy.—*Lond. Med. & Phy. J. Feb.* 1825.

Mr. Henry recommends the application of the extract of belladonna, moistened with water, to the painful part in tic douloureux. In one case a cure was slowly effected; in another, in less than ten minutes.—*Ib. June.*

Oil of turpentine has been recommended in France for the treatment of neuralgic diseases. In some forms of sciatica, which are analogous, it is highly spoken of by **Drefaur** in the Revue Med. and by **Martinet** in a memoire sur l'emploi de l'huile de terebenthine.

38. *Doctrine of Homœopathia.*—A new doctrine has arisen in Germany; it is called homœopathia, and teaches, that, in combating diseases, we ought to select such remedies as produce symptoms the nearest possible to those of the affection we wish to cure.

This principle, (if it be one,) so different from that of the Italian school, was discovered in 1806 by **Hahnemann** of Leipsic.

Inasmuch as belladonna produces by its operation on the body, a scarlet eruption, with affections of the fauces, similar to those noticed in scarlatina, he determined to employ the medicine accordingly.

Berndt, a physician of Custrin, used belladonna as a preventive of scarlatina, when it was epidemic in that city. He gave it to one hundred and ninty-five persons, of whom, only fourteen were afterwards infected, though continually exposed to the infection. He subsequently used a stronger preparation, and every subject of his experiment escaped the disease.

These observations have also been made by **Dusterburg**, a physician of Warberg. Some children who took no belladonna, in order to a comparison, were affected, while those to whom he gave it early enough, escaped.

Dr. **Behr** gave it to forty-seven, of whom, six only took the disease. Professor **Koreff**, of Berlin, says, that those who have taken belladonna in proper doses eight or nine days before, may be afterwards safely exposed, provided it be continued to the period of desquamation. Three grains of extract of belladonna being dissolved in one ounce of cinnamon water, two or three drops of the solution were administered twice a day to a child under one year old, and an additional drop for every additional year.

In general no sensible operation was effected; in some cases, however, an eruption resembling scarlatina was observed. It is agreed by most of these writers, that the belladonna mitigates where it does not entirely produce scarlatina, which never proves fatal to such as have taken the extract four or five days previous to exposure to the infection.

39. *Goitre.*—The discovery of iodine in 1813, by **Courtois**, a manufacturer of saltpetre in Paris; its adoption as a medicinal agent by Dr. **Coindet** of Geneva, in 1819, and the discovery of it in burnt sponge by Dr. **Fyfe**, in Scotland, shortly afterwards, are known to the profession. The application of this powerful medicine, in the treatment of bronchocele, continues to be popular, and we shall, therefore, communicate such facts concerning it as are worthy of notice, as occurring in the last year. Dr. **Charles John Ditchfield** cured a bronchocele as large as a duck's egg: he gave ten drops of

tincture of iodine three times a day, and a "piece of the size of a hazelnut, of an ointment, composed of a drachm of the hydriodate of potash, and two ounces of prepared hog's lard, to be rubbed on the tumour for a quarter of an hour, night and morning." The tincture produced some nausea for two or three days, but gave no uneasiness afterwards. Four leeches were applied every fourth day, and the young lady got well very rapidly.—*Lond. Med. Rep. Jan.* 1825.

Dr. Drug, in the London Medical and Physical Journal, January, 1825, who has been familiar with Goitre, in Derbyshire, informs us, among other things, "that the constant use of an acetous ferment, (especially in bread,) as an article of food, appears, under certain favourable circumstances, to be an exciting cause of bronchocele; such circumstances consisting either in a scrofulous diathesis, or a peculiar state of the system, the result of imperfect nutrition, confinement to factories, &c. &c., and goitre exists in a precise ratio with their degree of operation."

Again. "The tincture of iodine may be considered a pretty certain remedy for endemic goitre in young subjects:" he also thinks that though a powerful medicine, it may be given without danger to life. It is unquestionably a dangerous medicine, except in the hands of prudent and circumspect physicians. To be satisfied of the danger of transcending the limits, imposed by a proper caution, we have only to refer to the cases mentioned in the Journal Complementaire. A gentleman desirous to get rid of a small goitre, had permission of his physician to take tincture of iodine in doses of three drops; being impatient for the result, he took a teaspoonful of it at a dose for a considerable length of time. The consequences of this imprudence were a suite of symptoms, which were highly distressing, and continued until death. A woman also died under similar circumstances, and marks of most extensive inflammation were found in her abdominal viscera. In neither of these cases was the goitre diminished in size.

40. *Tartar Emetic ointment.*—In some observations on the ointment of tartarized antimony, Dr. Carter speaks favourably of its use in epilepsy, thereby confirming what he and Dr. Creighton had before said, concerning it. Dr. Carter remarks, that he "once saw from the application of the ointment to the chest, a most copious pustular eruption on the scrotum, while other parts of the body were unaffected." He adds, that "in one instance, sickness followed the use of the ointment; it was discontinued, and the sickness ceased, but returned as soon as the remedy was resumed.*
—*Lond. Med. Rep. April,* 1825.

Mr. R. Hunter, has used with great success, the tartar emetic ointment rubbed on the spinal region and head, in a case of rotatio or chorea, attended with singular symptoms.—*Ed. Med. & Surg. Journal, Jan.* 1825.

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* A case lately occurred to one of the editors of this Journal, in which the application of tartar emetic ointment to the chest, occasioned a severe gnawing pain in the stomach, very similar to that which the patient had experienced from the internal use of the same remedy.

41. *Spirits of Turpentine.*—We have had various recommendations, in regard to the best mode of exhibiting the spirits of turpentine, internally. Dr. Kinneir thinks, that the most proper method of administering it in puerperal fever, is in doses of from one to two drachms in some emulsion of almonds. This should be repeated, every third or fourth hour, until a considerable abatement of pain and other symptoms takes place.—*Lond. Med. & Phys. Journal, July,* 1825.

Ol. Tereb. in purpura hæmorrhagia.—A case of purpura hæmorrhagia, cured by the spirit of turpentine, is reported by Dr. Joseph Joy Magee, of Dublin. Dr. M. thinks, that in enteritis, peritonitis, colic, and certain inflammatory or spasmodic affections of the abdominal viscera, this remedy acts as a specific, and in dysentery he has seen the most decided advantage from its judicious exhibition. He generally gives half an ounce, in conjunction with an equal quantity of *oleum ricini*, and a little peppermint or cinnamon water; in smaller doses, he has found it to occasion strangury. In the case more particularly before us, the symptoms on the skin were very decided—hæmorrhage from the mouth, and mœlena stools were passed. The remedy was given almost every day, in the foregoing doses, and the patient soon recovered.—*Ed. Med. & Surg. Journal, Oct.* 1825.

Spirits of turpentine in erysipelas.—H. Cox, Esq. has described an interesting case of erysipelas of the face and scalp, in which the oleum turbinthinæ was successfully administered, although the patient presented the most alarming symptoms—such as countless pulse, profound coma fuliginous coat of the tongue, teeth and jaws. The medicine was exhibited in large doses; repeated several days in succession; the symptoms gradually disappeared, and the patient recovered.—*Lond. Med. Rep. April,* 1825.

42. *Ice in inflammation.*—The application of ice to painful and inflamed parts, is not new; but it is so often neglected, that we think it right to remark, that Dr. Allemand has removed, as if by enchantment, an excruciating pain of the ilio femoral joint, by the simple application of ice.—*Observateur des Sciences Médicales, Marseille, Feb.* 1825.

43. *Schirrus cured by antiphlogistics.*—Many cases have been cited, since the publications of Broussais, of cures of cancer and schirrus, by means of leeches. Professor Lallemand, published some cases last year; and Messrs. Treille and Varlez, also furnished examples of the sort. M. Roux, has lately effected a cure of schirrus, situated on the side of the neck, by means of the reiterated applications of these animals, and the use of sub-muriate of mercury, internally. The practice ought to be more frequently resorted to in this country.—*Ibid.*

44. *Chorea.*—In a very excellent essay on chorea, Dr. Drouet of Nantz, has detailed six cases of this disease, all of which were cured by means of the antiphlogistic treatment. Dr. D., in imitation of Broussais, regards chorea as the result of a chronic inflammation, either primary or secondary of the cerebro spinal system, and applies his remedies agreeably to this

view of the subject. In the cases described, leeches were applied behind the ears, or along the jugular veins. But, whenever the cerebro spinal irritation appeared to depend on an irritation of the stomach or other parts, leeches were applied to the latter. The patient was kept on small portions of the least irritating food; and, whenever there existed no gastric or intestinal phlogosis, purgatives were had resource to, as revulsives.—*Annales de la Médicine Physiologique, Mai*, 1825.

Antiphlogistics in chorea.—The practice of Doctors **Forcadi**, **Ulo**, **Isoard** and **Sue**, have furnished them with frequent opportunities of observing the good effect of leeches, and warm bath of soft water, in young girls who have not yet menstruated, and are attacked with chorea.—*Observateur des Sc. Med. Marseille, February*, 1825.

Dr. **Dupuis** describes an interesting case of chorea, in which local evacuations of blood, by means of leeches, were sufficient, without the aid of internal remedies, to effect the cure. The subject of the case was a boy thirteen years old. The gastric system was much irritated, and in consequence, it was on the epigastrium that leeches were first applied, and afterwards to the basis of the brain, and to the spinal region, for three weeks. At the same time, the patient made use of baths, the duration of which was gradually increased to several hours, morning and evening. In the course of a few weeks, the patient was cured.—*Annales de Medicine Physiologique, January*, 1825.

45. *Prussic acid in tetanus.*—Prussic acid has lately been applied to the treatment of tetanus by Dr. **David H. Trezevant**, of Columbia, S. C. Although in the case described the patient did not recover, the prussic acid had a decided effect in moderating the spasms of the affected muscles. Dr. T. says, "This acid appears to exert a much more decided effect upon the muscles of deglutition and those of respiration, than upon the limbs." If subsequent experiments prove this to be a fact, will it not be a valuable auxiliary in the cure of asthmatic affections, and the whole train of anginas? The remedy certainly deserves a trial in tetanus.—*Phil. Med. Rec. Oct.* 1825.

Prussic acid in hooping cough.—Mr. **Venable** has lately published some observations on the use of prussic acid in pertussis. In his hands, this remedy seems, indeed, to have been beneficial. He thinks the prussic acid is, probably, principally indicated in those temperaments which are more purely nervous, and in which great irritability is the more predominant character.—*Lond. Med. & Phys. Journal, Oct.* 1825.—The remedy has been employed before, by Dr. **Granville**, of London; and in this city, several physicians have occasionally resorted to it, and, we believe, with some success.

Prussic acid in nervous affections.—Mr. **Guerin de Mamers** has lately published the results of some observations on the use of the hydrocyanic acid in nervous diseases, and more particularly in epilepsy; from which it appears, that the medicine may be advantageously employed in these complaints. He gives it in small doses, having recourse, at the same time, to leeches, and other means calculated to remove any local irritation; and to revulsives, external and internal. As Mr. M. is a disciple of the physiological school, he lays much stress on the impropriety of having recourse to the latter, when there exists any phlogosis of the mucous surfaces of the stomach and intestines.—*Annales de la Med. Phys. Mars,* 1825.

46. *Employment of caustic to destroy the variolous eruption.*—M. **Velpeau** read a memoir to the Royal Academy of Medicine, tending to prove, that, if the pustules of the small-pox are cauterized within the two first days of their appearance, they die away entirely; and if this be done even later, their duration is abridged, and no traces of them left. The caustic he employs is a solution of nitrate of silver, in which he dips a probe, with which he pierces the centre of each pustule. M. **Dumeril** says, that he has been long familiar with this practice; but instead of the solution, he employed the solid caustic itself.

47. *Calomel.*—In a very good essay on syphilis, Dr. **Cartwright**, of Natchez, Miss., reprobates the use of small doses of calomel for the cure of this disease, and is of opinion, that large doses answer much better. In support of his opinion, he adduces several interesting cases of the worst forms of the malady cured by this means. He assures us, that he could relate numerous cases of the worst kind, attended with buboes, ulcers of the throat, caries of the bones, and nodes, which have yielded nearly as soon to the above plan, as a recent infection would have done to the common method. As respects recent cases, he has found them to yield almost as soon to twenty or thirty grains of calomel, given every or every other day, as a common cold in good constitutions yields to the native powers of the system. He never endeavours to produce salivation; and to guard against such an event, he always directs an injection to be given, or some mild purgative taken, in twelve or sixteen hours after the calomel, if it does not operate. "And in the event of its operating too much, I direct a little laudanum, so as to limit its action on the bowels to two or three evacuations, unless they be of a dark green or black colour. As soon as a copperish taste is perceived in the mouth, or the least tenderness of the gums, or soreness of the teeth, I order its immediate suspension, until these symptoms have disappeared; when it should be resumed with caution.

Dr. **Cartwright** is an advocate for very large doses of calomel in bilious diseases, instead of the smaller and repeated prescribed by some physicians. This practice is also had recourse to by our friend Dr. **Johnson**, of Louisville.—*Phil. Med. Rec. July* 1825.

48. *Galvanism* has lately been used, with the greatest success, in the treatment of paralysis. A case is described in the Revue Médicale, for May 1825, in which the lower extremities were completely paralysed. Nux vomica, digitalis, arnica, and other remedies were employed in vain.

Galvanism was then employed, and after seven applications, the disease was completely removed.

49. *Moxa.*—The moxa is occupying the attention of the British physicians more than it had heretofore done. In the hands of Mr. Boyle, it has been very useful in several diseases, of the joints particularly. This physician recommends the following preparation, which appears to be, in many respects, similar to the Chinese moxa. It is formed by dissolving one ounce of nitre in a quart of water, and saturating in it some fine cotton wadding. This being afterwards dried and divided in small parcels, enclosed in paper cylinders, about an inch in diameter and one inch in height. Agreeably to Mr. Boyle, this preparation burns in a very slow and gentle manner, and when kept dry, is always fit for use.—*Boyle on Moxa.* p. 29. 1825.

Dr. Burne has lately employed moxa formed of wood in a state of dry rot touchwood, which is said to be used for the same purpose by the Laplanders. He finds that this may be applied with greater facility than any other material hitherto in use, and it requires no other preparation than the cutting into cones or cylinders of convenient size. The combustion supports itself without the aid of bellows, produces almost no smoke, and is so gentle and equal as not to excite horror or alarm in the patient. The cones are readily affixed to any part of the body, by touching the opposite sides of the base with the least possible quantity of adhesive plaster, which renders the use of the forceps unnecessary. Our readers are aware that the mode in general use, consists of a cylinder of cotton, or magwort, or lint, or cotton, which have been steeped in a solution of nitrate of potash. But all these materials are objectionable; the cotton and magwort requiring bellows to keep up the combustion, and giving out a great quantity of smoke; and the nitrate of potash making it necessary to defend the surrounding parts from the sparks. The combustion, too, is sometimes violent, sometimes difficult, and at others incomplete. The cylinders of touchwood answer very well, where it is desirable to apply moxa in the manner recommended by Dr. Boyle.—*Lon. Med. Repository, Oct.* 1825.

Mr. Sarlandiere recommends that in applying moxa, use should be made of cold substances, laid as near as possible to the spot, which are undergoing cauterization, in order that the patient's sensations distracted by the extremes of heat and cold, may be rendered vague and less painful; his patients have been much comforted by applications of cold pieces of iron or marble; ice is also used.—*Memoire sur l'Electro puncture et sur le moxa. &c.* p. 70.—*Paris,* 1825. 8vo.

50. *Acupuncture.*—At a sitting of the section of surgery in the French Academy of Medicine, Mr. Aumont briefly related the case of an officer on whom acupuncture of the abdomen was performed for the relief of pains which had resisted all other means. The first needle was introduced two finger's breadth from the umbilicus, and caused severe pain. A second needle was inserted at the same height, and along the inner border of the rectus

muscle; the second puncture was scarcely made before the patient fainted; and when he recovered he complained of tormenting pain, which was soon accompanied by fever and a distressing heat in the region of the abdomen. This state lasted several days, and when it had yielded to an antiphlogistic treatment, the original painful disorder had not suffered the slightest diminution.—*Lon. Med. Repository, May*, 1825.

According to Mr. **Meyranx**, the needles made use of at la Pitié, are of steel, but rendered ductile by heating them in the flame of a candle, and then suffering them to cool slowly.

Mr. **Boulard** of Orleans, has detailed the results of two operations of acupuncturation. In the first case, the patient was affected with a violent rheumatic inflammation of the upper part of the left shoulder. The needles were applied at three different times, and the patient recovered in twenty-two days from the first operation. This patient was attacked, on the first day of the operation, with a complete syncope. In the second case, the needles were had recourse to for a pain in the right hypochondriac region, of long standing. After repeating the operation several times, the pain disappeared, but was succeeded by epileptic attacks, which continued to appear every four or five days. Mr. **Boulard** generally applies dry cups before resorting to the needles.—*Annales de la Med. Physiologique, Mars.* 1825.

Mr. **Sarlandiere** has lately offered a description of the shape and length of the needles used by the physicians in Japan and China, for acupuncturation. He has also given an account of their composition. He claims priority in the use of this remedy in France; and is of opinion, that the sensations experienced by the patient, on the introduction of the needle, are the result of a galvanic action occasioned by the contact of the metal with the nervous and muscular fibres, and with the fluids which wet the needle.—p. 251.

Professor **Pelletan Fils** has published a notice of the theory and effects of acupuncture, from experiments made at the hospital Saint Louis. It results from his observations that he has seen acupuncture practised with success; 1st, in violent neuralgia; 2nd, in rheumatism; 3d, in accidental contusions and anomalous pains; 4th, in chronic affections.—*Revue Medicale, January* 1825.

M. **Meyranx** has also published the results of experiments tried at la Pitie by Dr. **Bally**. From him we learn that Dr. B. used it in rheumatism, and in general obtained success from it, provided there existed no inflammatory fever. He also prescribed it with success in a case of pleurodynia succeeding to pleuritis, and with relief in a case of chronic inflammation of the pericardium. In this case, Mr. **Beclard** introduced four needles in the region of the heart, one of them penetrated as far as the left lungs, and probably touched the pericardium.—*Archives Generales, Feb.* 1825.

M. J. **Cloquet** has in like manner tried experiments, amounting to several hundreds, at the Hospital Saint Louis. For an account of many of these we must refer to an essay on the subject, by M. **Morand**, a translation of which has lately been published in this city, by Dr. **Franklin Bache**.

MM. **Pouillet** and **Jules Cloquet** have established, on sure grounds, the fact of galvanic changes, effected in acupuncturation. The electro galvanic phenomena were always visible in their experiments when oxydizable metals, as steel, were used. None, however, were visible in experiments made with needles of platina, gold or silver. Hence the inference of galvanic, and not mere electric movements in the cases under consideration.—*Journal de Physiologie, Avril*, 1825.

51. Mr. **Brera** has very recently used in the hospital of Padua, a species of bark which he calls the *Quina Bicolor*. Agreeably to him, it possesses considerable febrifuge properties, and has a nearer resemblance to the Simarouba or to the Bonflandia, than to Cinchona.—*Revue de Chimie Medicale, Feb.* 1825.

52. *Neuralgea.*—We publish, with much pleasure, the following letter, received by one of the editors. So far as we can learn, the practice recommended is new, and deserves attention.

Dear Sir,—About three years ago, my servant, Lemuel Jones, was afflicted with a neuralgic affection of the right side of the forehead, of a periodical character. Such was the severity of the paroxysm, as to affect his mind, and to raise a considerable tumor at the time of attack. Believing, from the protracted duration of the complaint, and from certain phenomena, that the bone was diseased, I cut down to it, in the hope of relieving him. The bone was found perfectly sound, but the part appeared unusually vascular. This led to the opinion that perhaps the local irritation might be removed, by tying up the branch of the temporal artery going to the part, which was accordingly done. The disease ceased, and from that period he has not felt, in the part, the least symptom of irritation; nor has a similar disease attacked any other part of his system. Dr. Sharpless, of this city, favoured me with his assistance in this operation, and can vouch for the accuracy of the statement.

Encouraged by the success of this operation, I have since, in two other cases of neuralgic affection of the scalp, passed ligatures round the principal arteries going to the part, and in both cases had the pleasure of effecting an immediate and perfect cure.

I expect soon to receive from the country two cases of neuralgia, one of the cheek, and another of the great-toe, in both of which, if acupuncturation should fail, I will try the effects of ligatures on the arteries of the part, and report to you the result.

A short notice of this, which I believe to be a new practice, will much oblige,

Dear Sir, your friend,

J. K. MITCHELL.

53. *Ilex aquifolium.*—Mr. EMMANUEL ROUSSEAU has lately called the attention of Physicians to the febrifuge properties of Ilex aquifolium (Holly oak) in a memoir read before the Royal Academy of Medicine of Paris. This is not a new remedy, as it appears to have been long ago used by REID, in an epidemic of intermittent fevers; and is often resorted to in several provinces of France; but we are not aware that any one, previous to Mr. ROUSSEAU, has made so many and positive experiences with it. He administered an infusion in white wine; and in the dose of one drachm of the powder given two or three hours before the expected paroxysm, has succeeded in putting a stop to the disease.—*Aperçu sur les propriétés Febrifuges du Houx.*

54. *Spilanthus oleracea.*—Mr. EMMANUEL ROUSSEAU has lately published a minute description, and chemical analysis of the *Spilanthus oleracea,* or Cresson of Para. To this he has added some observations on its medicinal properties: from which it would appear, that this plant is a valuable remedy in scorbutic diseases. Mr. ROUSSEAU also informs us that Mr. MORAND has used this remedy, and found it invaluable in passive hæmorrhages of the gums, and all asthenic affections of the mouth. Mr. R. administers it in an alcoholic tincture, in the proportion of one handful in half a pound of alcohol at 33o. The dose is a table-spoonful three times a day, in half a tumbler full of infusion of Saponaria.—*Revue Medicale, Avril,* 1825.

55. *Flower of the Colchicum.*—THOMAS BUSHELL, Esq. has lately offered to the medical public, some cases illustrative of the beneficial effects of the Flores Colchici Autumnalis, in acute and obscure Rheumatism, Chronic Iritis, inflammation and swelling of the muscles, &c. After describing six cases, he adds, "I could adduce, were it necessary, many other cases, in which the preparations of the flower of colchicum were administered with the most satisfactory results. I have seldom found that they have not exerted a very powerful influence on the nervous and vascular systems—Pain has been allayed, the force of the pulse has been diminished, and the secretions, in general, have been materially augmented. A medicine possessing these properties cannot be without its value in the treatment of disease." Mr. B. from his experiments with it, is disposed to recommend the flower as more efficacious, certain, and tractable than the root or seeds. In respect to the best mode of preserving the flowers for medical use, he says, "The colchicum autumnale produces its pale blue flowers in the month of September. They possess the new aromatic odour, and contain a considerable portion of acrid mucilaginous juice, which renders them difficult to dry; not only the petals, but the whole flower-tube (which is long) should be gathered for use. The dried flowers should be exhaled from air and moisture, as they lose their odour and become damp. I have made the tincture in the following manner:—

R. Flor. Colch. exsiccat et contus. 1 oz.
Spirit. Tenuioris octarium unum.

Macera per dies septem, tunc exprime et cola.

The wine and vinegar in the same proportions.—*London Medical Repository for March*, 1825.

In an essay on the Flowers of Colchicum Autumnale, Mr. **Frost** remarks, that they afford the profession a certain uniform and safe medicine, in those cases in which the use of the Colchicum is indicated, and do not produce those unpleasant effects which occasionally follow the use of the bulb. "Another great advantage, he observes, is, that the strength and properties of the preparations made from them are always uniform; for the collector cannot err in the time of selecting them, and their virtues cannot be readily impaired by the mode of conducting the processes for their preparation."—*London Medical Repository, August*, 1825.

56. *Cornine.*—Mr. **George W. Carpenter**, a very intelligent chemist of Philadelphia, has lately succeeded in obtaining an alkaline principle from the bark of the cornus florida. To this substance he has given the name of cornine. Drs. **Morton** and **Reynel Coates**, of this city, have employed this preparation in intermittent fever, and speak highly of its efficacy. The dose is the same as that of sulph. quin.—*Philad. Medical & Physical Journal, November*, 1825.

SURGERY.

57. *Compound luxation of the knee joint.*—Messrs. **Miller** and **Hoffman**, surgeons, report a case in which the os femoris was thrown completely from the tibia, obliquely downward and outward; its external head protruding through the integuments, and causing a lacerated wound of about three inches, which exposed the joint, and the poplitæal artery: the latter being uninjured. The dislocation was immediately reduced without difficulty; the lips of the wound approximated by sutures, and adhesive strips, and, after reaction, the antiphlogistic practice was adopted—general bleeding being required. The discharge from the joint at first, consisted of synovia and ill digested pus; was afterwards thin and ichorous: as his strength increased, and the fever declined, it improved, and by the middle of July, (the accident occurred on the 28th of May, 1825,) the wound had nearly healed, and the joint capable of complete flexion, but not of extension. On the 23d of August, the wound had been healed more than a month, his crutches were laid aside, and the patient able to walk with a tolerably firm step.—*London Med. Repos. for October*, 1825.

58. *Amputation at the hip-joint.*—Professor **Walther**, of the University of Bonn, on the Rhine, has lately performed this severe operation, in the case of a young man, whose constitution was nearly exhausted by chronic abscesses of the thigh, complicated with a subsequent fracture of the os

femoris. The operation was borne very well; incipient union had commenced; laudable pus and healthy granulations had formed by the fifth and sixth days; but, unfortunately, a gangrenous ulcer on the sacrum, now disturbed the progress of the cure; fever ensued, and the patient died on the eleventh day. There were no diseased appearances in the chest or abdomen; no inflammation of the internal surfaces of the veins, and, in the arteries, the usual plugs of lymph were found.—*Medico-Chirurgical Rev. Oct.* 1825.

59. *Hospital gangrene*—Mr. Guillaume, army surgeon, has treated with the greatest success, a wound, complicated with "*hospital gangrene*," by means of leeches. It is well known that this practice has been often successful, since the physiological era in medicine.—*Journal Universel, May,* 1825.

60. *Removal of a great portion of the scapula.*—This operation was performed on the 4th of October, 1824, by M. Janson, principal surgeon of the Hotel Dieu, at Lyons. Five years previously, a tumour commenced on the scapula, which had, at last, attained the size of a child's head; extending into the axilla, so that the arm was kept elevated at right angles to the body; violent darting pains; loss of sleep, appetite, and strength succeeded. All that portion of the scapula, which was above its spine, was found in a healthy condition, and being separated by a saw, from the diseased part of the bone, the latter was removed; so that the articulation of the arm was preserved. That portion of the tumour in the axilla, was also completely removed. By the fifteenth of March, the parts had entirely healed, and the motions of the limb were becoming daily more free.—*Archives Gen., Aout,* 1825.

61. *Cataract and Gutta Serena.*—Dr. Gondret reports, that the cauterization of the frontal portion of the cranium, either by means of heated copper, or by ammonia, *cures*, as well as prevents both cataract and gutta serena. He says, that by these means, together with the continued employment of galvanism, he has succeeded in curing many aged persons of these affections, and has improved the condition of many others.—*Revue Med. Journal,* 1825.

62. *Fistula Lachrymalis.*—M. Gensoul, chief surgeon of the Hotel Dieu, at Lyons, has reported through M. Lisfranc, several cases of fistula lachrymalis, cured by means of "caustic introduced through the inferior orifice of then asal canal."—*Annales de la Med. Phys., Mar.,* 1825.

63. *Tumor Lachrymalis.*—M. Beclard and other surgeons have cited cases of recovery, by applying leeches near the "tumor lachrymalis," and in the direction of the lachrymal canal.—*Ibid.*

64. *Circocele.*—Dr. Jameson has executed with success, in two instances, a new operation for this complaint, by tying the spermatic artery; thus cutting off the supply of blood to the enlarged and diseased veins. He, in this manner, avoids the danger of operating upon diseased veins, and, at the

same time, prevents their further distension. His first operation was in March, 1821, the second in November, 1822. The same operation, says Dr. **Jameson**, has also been performed by M. **Maunoir**, of Geneva, in two cases, with success. These were published in 1821, after Dr. J. had devised and executed his operation in Baltimore.—*Med. Rec., April,* 1825.

65. *Cancer of the Uterus.*—M. **Bandelocque**, the nephew, relates the case of a cancer of the uterus, which he cured by the repeated applications of leeches to the cervix uteri, by the use of a compress covered with an opiate cerate: by the repeated applications of the lunar caustic to the fungous growth, and, at the commencement of the disease, by the employment of injections of solutions of sulphate of zinc, acetate of copper, and deuto-chloride of mercury, assisted during the whole course of the treatment, which lasted for three months, by the use of hip baths and narcotic enemata.—*Archives Gen., Juin,* 1825.

66. *Puncture of the bladder above the pubis.*—F. **Robin de Brissac**, M. D., relates the case of a man æt. fifty-six, who, from some pernicious habits, was liable to a retention of urine from inflammation at the neck of the bladder. For this retention he had submitted *eleven times* to the operation of puncturing this viscus above the pubis, from the year 1822 to 1824; had never suffered from traumatic fever or from infiltration into the cellular tissue, and at the end of a few days, in consequence of bleeding and other general measures, the course of the urine, "per vias naturales," was always re-established. The operation was performed with a straight cannula and trocar, without any inconvenience. By attention to some preventive measures, he has not had another attack for the last eleven months.

M. **Brissac** makes several judicious remarks on the operation here practised, and examines the foundation for the fears usually entertained against it, and for the preference given, in all cases, to the persevering and injudicious attempts to introduce the catheter, while the puncture remains only as the last resort. All agree in the simplicity and ease of the operation: but the two objections are, the *non-dependent* orifice, which is made, and the danger of urinary infiltration. The first objection is obviated by suffering the cannula to remain, by which the urine will be easily voided whenever there is a necessity for the evacuation. As to the infiltration of urine, it cannot occur at the time of the operation, as the cannula is closely embraced by the surrounding parts, so that no urine can pass between it and the tissues, and afterwards, the union of the lamina of the cellular membrane, forms a fistula impermeable to the urine. Experience has proved, that no urine will escape even if the cannula be removed in twenty-four hours, as happened several times in the above case. Hence our reporter concludes that little or no danger or difficulty attends this operation, and that in some instances it should be preferred to the more common and too exclusive practice of forcing a catheter through the urethra.—*Annales de la Medicine Physiologique, March,* 1825.

67. *Bronchotomy.*—An infant swallowed some very hot water, which caused so much inflammation and swelling of the throat and larynx, that suffocation was threatened. Life was preserved by the operation of bronchotomy.—*Archives generales de Medecine, April,* 1825.

Mr. Goodeve, surgeon to the Clifton Dispensary, on the 25th of September, 1824, successfully performed tracheotomy on a patient who had suffered from diseased larynx since the year 1820, and who, at the time the operation was performed, was in a state of asphyxia. A circular piece, about half an inch long, was cut out of the trachea; the air rushed in with immediate relief. In about an hour, a cannula could be borne in the trachea, and was worn, without inconvenience, for six months. The patient was then able to lay it aside, and his voice was quite restored.—*London Med. Journal for July,* 1825.

Mr. Carmichael, it is said, has performed with success, the same operation, under similar circumstances. "We expect to see the day, when the operation will be often performed in ulcerations of the larynx, so as to give the said ulcerations time to heal, and the cartilages to exfoliate. We have no doubt, that many cases of laryngeal phthisis might be saved by this operation."—*James Johnson, M. D. in Med. Chirurg. Review, Oct.* 1825.

68. *Paracentesis thoracis for Empyema.*—A robust man, aged twenty-four years, was attacked on the 24th of January, 1824, with the symptoms of acute pneumonia. By decided antiphlogistic measures, on the fourteenth day, he appeared convalescent, but at the expiration of four days, pain, cough, dyspnœa, horripilations, &c. returned, followed by hectic symptoms, of the most threatening character, with a sense of suffocation and a feeling of weight in the breast; he could not move for a few moments, without loss of breath, and danger of syncope; continual orthopnœa, disturbed and frequent pulse, &c. The right side of the chest was enlarged; the ribs separated; the intercostal spaces prominent, and on percussion, a heavy sound was emitted at every point.

M. Renard saw this man on the 29th of February, and on the 1st of March, having decided that an effusion had occurred, he operated from empyema. The external incision of the skin, &c. was two inches in length; but a puncture merely, was made into the pleura, through which, about three pints of a sero-purulent fluid escaped, "with astonishing force, and was thrown to a considerable distance, by each respiratory motion." As soon as its violence lessened, "we introduced a tent of lint into the breast." The wound was covered by a pledgit and bandage; immediate relief was afforded; perfect rest, and a milk diet was enjoined.

In the evening, by the efforts to cough, the tent was driven out, and the pus ceased to flow; it was necessary to enlarge the opening in the pleura, by an incision five or six lines in length, through which, another pint of matter was discharged. The tent was taken out every twenty-four hours, for the discharge of pus; and "every possible precaution was taken to prevent the entrance of the atmospheric air," but some, nevertheless, entered at each dressing. The pus became altered, and if not evacuated every day, proved irritating, and brought back all the bad symptoms; to facilitate its complete discharge, injections of barley water (miéllée) were occasionally used. In this way, the pus became "laudable," and daily diminished in quantity; the patient recovered his health, flesh and strength. "The sides of the cavity insensibly approached each other, so that, by the 17th of April, the contact was complete," and by the first of May, the whole was cicatrized, and the right side of the chest had recovered its form and functions.

"It is in these circumstances especially, (our reporter adds,) that we should literally obey the well known axiom." "Melius est anceps remedium quam nullum." Without the operation, the patient would have perished.

Two more interesting cases, related by the same gentleman, were treated in the same manner, and with equal success; want of room, however, prevents us from offering them in detail.

Mr. **Renard**, in some reflections on the above cases, observes, that the prejudices of many surgeons against this operation, and its frequent want of success, should be attributed, not to the operation itself, but to the subsequent treatment, which has hitherto been based on the idea, that tonics and stimulants are necessary for the management of the "*pretended* hectic fever," which endangers the patient. "These measures never fail to exasperate the phlogosis, which had caused the effusion of pus, and to effect the disorganization of the tissues affected." That the mixture of air with the pus, will produce changes in this fluid and render it irritating, **Broussais** and most others readily acknowledge, and it is confirmed by the two first of the above cases; but no bad consequences will hence result, if it be evacuated every twenty-four hours, with suitable precautions to prevent, as much as possible, the introduction of air; if mild injections are thrown into the interior of the cavity, and especially, if we never desert the soothing plan of treatment. In this way, unless disorganization has already occurred, the pus will resume its healthy character; the phlogosis will be dissipated, and the patient preserved. This practice, so improved and successful, is derived from the principle of making physiology the foundation of medical and surgical principles.—*Annales de la Medecine Physiologique, May*, 1825.

In a case of pleurisy, followed by effusion in the cavity of the pleura, which occurred at the Hotel Dieu of Paris, Professor **Recamier** evacuated the fluid by means of a fine trocher, "the great advantage of which, is, that it does not allow the admission of air into the chest." The operation was repeated three times, and the patient entirely recovered.—*Tableau des maladies observées a l'Hotel Dieu dans les salles de clinique de M. le professeur Recamier pandant le quatrieme trimestre de* 1824, *par L. Martinet.*

69. *Chronic Hydrocephalus.*—J. F. **Barnard**, Esq., member of the Royal College of Surgeons, published in the Medical Repository for 1823, a case of chronic hydrocephalus, *successfully treated by pressure*, at a very advanced period of the disease, and when there appeared little chance of the recovery of the patient.

He now reports a *second successful case*, of a child eighteen months old. Head enlarged: bones separated, and fontanelles distended by the included fluid: convulsions, but no strabismus: disorder of the stomach and bowels: excretions various in colour and in consistence. He had the head shaved, and applied adhesive plaster tightly around it. Castor oil directed to be exhibited occasionally. The plaster was renewed as it became loose. This practice was steadily continued for one month. The child regained its health and strength, and continues to enjoy both. "The head is now, three months from the time of leaving off the pressure, of its natural size, and the bones are rapidly uniting." Bath, 27th July, 1825.—*London Med. Repos. & Review, Sept.* 1825.

70. *Lithotomy.*—Dr. **Jameson** recommends very strongly, the practice of passing an elastic catheter through the urethra, immediately after the operation, so as to prevent the accumulation of urine in the bladder, and its transit through the wound; and thus allow the external incisions to unite by the first intention. He has "practised this twice in calculous patients, with the fullest success, and many times in operations upon the urethra."—*Med. Rec., Oct.* 1825.

M. **Beclard** operated on a young man, aged nineteen years, by making a transverse incision on both sides of the neck of the bladder. The wound closed rapidly; in two hours, urine was discharged per urethram; and from this time none passed through the wound. No difficulty or delay was experienced in the recovery.—*Archives Gen. de Med. Feb.* 1825.—*An. Med. Phys., May,* 1825.

71. *Calculi retained in the urethra.*—M. **Aumont** reports, that he has several times succeeded in obtaining the expulsion of calculi, arrested in the urethra, by passing a gum elastic tent into the urethra as far as the calculus, and allowing it to remain there. Thus, the passage becomes dilated, so that the foreign body is forced out by the impulsion of urine. M. **Baffes** reports a similar case of impacted calculus, in which the father of the child succeeded in disengaging and removing it by means of suction, performed with his mouth.—*Archives Generales, Juin,* 1825.

72. *Calculus in a female.*—Dr. **John Mackintosh**, Lecturer on Midwifery, has lately extracted from the bladder of a female, a calculus weighing one ounce and thirty-five grains; which, he says, is larger than that extracted by Mr. **Green**, which last is of greater size than that in any well authenticated case yet published. The knife was not used; but the urethra was dilated by means of sponge tents, prepared with tallow, (those with wax failed;) so that, by the fifth day, the forceps could be introduced, and

the stone, with some little difficulty, removed. Twenty days after the operation, she could *retain her urine* and pass it at pleasure; her health being perfectly re-established, after fourteen years of suffering.—*Ed. Med. & Surg. Journal, July,* 1825.

73. *Gastrotomy for obstructed bowels.*—H. Baron, aged forty-four years, had always enjoyed good health, until three or four months previously to the 18th of July, 1824, when he consulted Dr. Richard Maitland, of the Blackburn General Dispensary, on account of a complete obstruction to fæculent evacuations per anum. On examination, a stricture of the rectum was discovered, which could not be overcome by bougies, injections, &c. &c. On the 24th, he consented to the operation, as his only chance of safety. He now had considerable fever; pulse 105, tongue foul, belly enormously distended, and tympanitic; very little pain; spirits low. At 9, A. M., the operation was performed in the left iliac region, by an oblique incision four inches in length, downwards and inwards, beginning about an inch above the superior spinous process. The peritoneum was opened to the extent of about two or three inches. The colon now presenting, was fastened to each end of the wound by a suture, (which expedient proved very useful,) and an opening, one inch and a half in length, was made into it. A considerable quantity of wind and liquid fæces were evacuated. Two other ligatures were passed between the cut edges of the colon and the external wound. By 10, P. M., five to six quarts of liquid fæces, a few scybalæ, and much flatus, were discharged; the distention of the abdomen removed; no pain on pressure, except at the wound; fever considerable. The next morning, another quart of fæces was discharged; fever diminished; and from this time, the patient gradually recovered, with an artificial anus. No means were successful in overcoming the stricture of the rectum. —*Ibid, Oct.* 1825.

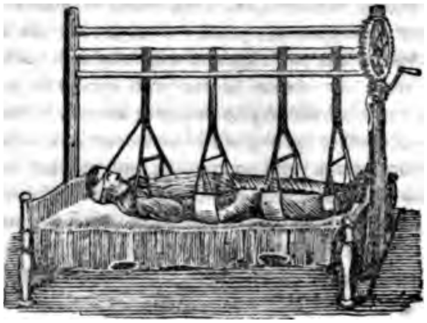
In Hufeland's Journal for February, 1825, there is an interesting case recorded, in which *Gastrotomy* was performed for an intussusception, with success. The disease came on suddenly in a healthy man. Dr. Fusethius saw him on the fourth day; and with the usual symptoms of obstruction, perceived, also, an induration about the angle formed by the ascending and transverse portions of the colon.

The usual treatment for obstructed bowels was ineffectually tried, not omitting the exhibition of quicksilver, and enemata of cold water; and on the tenth day, the patient, when nearly exhausted, consented to the operation.

An opening, about two or three inches in length, was made on the outer edge of the right rectus muscle, and about two inches above the level of the umbilicus; through which Dr. F. introduced his hand, previously smeared with oil, to search for the indurated part. A portion of the ileum was found, containing a foreign substance, just where the hardened part had been felt externally, and was drawn out; it was neither inflamed nor distended, but evidently contained an intussusception, the end of which, however, could not be felt. The intestine was opened, and a portion of the invaginated gut exposed. The operator introduced his finger into the bowel, and fortunately succeeded in unfolding the entangled intestine, *which amounted to two feet in length*. There was no trace of inflammation, or any of its consequences. There was a teres worm in the upper part of the invagination. The glover's suture was used for the intestine, the ends of the ligature being brought out of the external wound; and the interrupted suture for the opening in the integuments. A natural stool occurred on the second day; no bad symptoms followed; and on the fourteenth day, the patient was quite well.

This account is condensed from the Medico-Chirur. Review, for Oct. last.

75. *Venckes's Alleviator.*—This machine was invented by Mr. JOHN C. JENCKES, "an ingenious and respectable mechanic," of Providence, Rhode Island, in the summer of the year 1822, whilst confined to his bed with a fractured leg. It has since been used in different parts of our country, in hospitals, and in private families, and the inventor has obtained the certificate of some of the most distinguished surgeons, as to its great utility in all cases where individuals are long confined to bed, whether from accidents or disease. Among these names we notice those of Drs. WARREN, INGALLS, HOSACK, POST, MOTT, STEVENS, &c. &c. In this city it has also been advantageously used. Professor GIBSON recommends it as the most simple and efficacious method yet devised for the alleviation of the helpless. Mr. J. has obtained a patent for the machine.



MIDWIFERY.

76. *Gastrotomy.*—A female at Parma, aged forty-four years, the mother of five children, suffered a rupture of the uterus, on the ninth of August, 1817, during labour, at the full period of uterogestation. Professor CECCONI, in the presence of Dr. S. ROSSI, performed the Cæsarian operation (Gastrotomy?) two hours after the accident. The incision was made at the interior and left side of the abdomen, where the feet of the infant could be felt. The fœtus was removed, *living*. In forty days the mother was perfectly well; the menses returned rather slowly, and three years afterwards, she gave birth to an infant which lived fourteen days.

Communicated by Dr. LOUIS FRANK.—*Bulletin Universel, Juillet*, 1825.

77. *Extra Uterine Pregnancy.*—Dr. **Lalanne**, of Sarragossa, under date of the 31st of March, 1825, communicates a case of extra uterine conception, followed by an abscess, the discharge of the fœtus, and subsequent recovery of the mother; of which the following is a summary.

J. S. aged twenty-three years, always enjoyed good health; menses profuse; was married at nineteen years of age, but no indications of conception was manifested until two years after this event: at which time menses ceased, with nausea, vomiting, &c. which continued for four months, when her situation was well ascertained. At this time, she was seized with a violent pain in the region of the uterus, and fainted for half an hour. The pain continued in the left iliac fossa, and required frequent bleedings to moderate it. She continued to increase in size, and has had, since the third month, obscure indications of the fœtal movements. At the seventh month, a leucorrhœa appeared. During the eighth and ninth months had glairy discharges per vaginam; while the mammæ filled with milk. At the end of the ninth month labour pains supervened, but nothing was discharged. They continued so severe that her system was debilitated and life despaired of, until at the end of the tenth month, a mole, or hydatid, was expelled from the uterus, of the size of a pullet's egg, but long and flattened; some relief was now obtained. At the twelfth month a second mole, smaller than the first, was rejected from the uterus. At this time a small, deep-seated tumour appeared near the umbilicus, which enlarged, formed an abscess, and, at the fifteenth month, opened internally, about two lines below the navel. Much matter was discharged, with relief of pain and diminution of the abdominal swelling. A fistula resulted, the menses did not appear, and the leucorrhœa continued, the patient regaining some health and strength. On the first of December, 1824, and in the twenty-fifth month after conception, she entered the hospital, and came under the care of M. **Lalanne**, who discovered the remains of a fœtus in the cyst. The fistulous orifice was dilated by sponge tents, and in fifteen days, the bones of a full-grown fœtus were extracted. By the 27th of December, the cyst was emptied of foreign matter, and much diminished in size. It continues to decrease, and now the whole is nearly well, the patient's health improving, but the leucorrhœa yet continues and the menses have not re-appeared.

Dr. **Lalanne** would infer, that the impregnated vesicle remained in the ovary, or was arrested in one of the fallopian tubes; that at the fourth month the exterior envelope was ruptured, and the ovum fell into the cavity of the peritoneum, where it contracted new adhesions, and continued to increase to the ninth month, at which time labour pains were excited; first, by "the sympathy of relation of the uterus with the cyst, enclosing the product of conception," and 2ndly, by the presence of the mole or hydatid in the uterus; that the abscess resulted after the cyst of the fœtus had contracted adhesion; and that the inflammation of the cyst, excited by the putrefaction of the fœtus, would affect more particularly the points of adhesion, and hence, the subsequent abscess would here form and open externally; and finally, that the leucorrhœa occurring at the seventh month, was a substitute for the menses, which were formerly very abundant.—*Annales de la Med. Phys., Juillet,* 1825.

78. *Prolapsus Uteri.*—M. Gerardin has recently proposed a radical cure for this affection, the principle of which is to effect an obliteration of the vagina.—*London Med. Repos. & Rev., Sep.* 1825.

79. *Laceration of the Perinæum.*—A case is communicated by M. Gravis, docteur chirurgien des mines d'Anzin, and by M. Lebrun, member of several medical societies, of a female, aged nineteen years, who was delivered of her first child through a rupture of the posterior part of the vagina, and the perinæum, *the fourchette and the margin of the anus remaining entire.* She was not examined by the above named surgeons until the tenth day; means were then taken to subdue the inflammation; sutures were afterwards passed, merely through the *external parts,* and in ten days all was well, excepting a small fistulous opening near the rectum, which did finally close in two months.—*Annales de la Med. Physiologique, July,* 1825.

CHEMISTRY AND PHARMACY.

80. *Application of solutions of neutral salts to vegetable analysis.*—M. Robinet has made some interesting observations on the peculiar solvent powers of different saturated saline solutions, and proposes to employ them in the delicate processes of vegetable analysis. Applying his method to opium, it would appear that he has made the unexpected discovery, that the morphia in this drug is united to a peculiar acid, different from the meconic; while the meconic acid in reality exists in it as a super-meconate of *soda.*

It appears also that M. Robinet has ascertained some additional properties belonging to morphia. Among others, he states, that it possesses the peculiar characters of becoming blue by the action of the persalts of iron, and of being precipitated, in all its saline combinations, by the muriate of platinum.—*Journal de Pharmacie, Aug.* 1825.

81. *Preparation of sulphate of soda from sea-water.*—Mr. Daniel B. Smith, Chemist of this city, has published some interesting observations on the extraction of sulphate of soda from sea-water, the source of nearly all the Glauber's salt consumed in the United States. The subject is curious, because the best chemical authorities are silent on this source for the preparation of the salt in question.

Sea-water is known to contain, (not to mention lime,) sulphuric acid, magnesia, muriatic acid and soda; for we shall consider, for the sake of the explanation, that chloride of sodium or common salt, becomes muriate of soda by solution in water. Now it is not easy to say, as Mr. Smith remarks, in what order these ingredients are combined. It is, however, certain, that, if the sea-water be evaporated in the summer season, sodium falls in combination with chlorine as common salt, as a first product, and afterwards, if the evaporation be continued, sulphate of magnesia or Epsom salt. After these two saline precipitations, there is still a small excess of muriatic acid, which remains in solution, in combination with magnesia. This analysis, by evaporation in summer, accordingly, gives us chloride of sodium, sulphate of magnesia, and muriate of magnesia, and would seem to determine the order of combination.

But the binary arrangement is far otherwise, if the evaporation of the sea-water be conducted in winter, and the brine be exposed to extreme cold weather. For, under the influence of a very low temperature, the sulphuric acid, and a portion of the soda sufficient to saturate it, are found to form a crystalline deposite of sulphate of soda. This being removed, the residual solution yields in the spring a diminished quantity of common salt, and furnishes a bittern, containing a comparatively large quantity of muriate of magnesia.

Now the statement just made may be inferred from the facts communicated by Mr. Smith. For, from information received by him from Massachusetts, where all the Glauber's salt from sea-water was manufactured, it appears that it is only during the rigorous cold of the winter in our northern States, that the formation of sulphate of soda is determined.

Assuming, as is most probable, that sulphate of magnesia naturally exists in sea-water, Mr. Smith very satisfactorily accounts for the formation and precipitation of sulphate of soda, from the operation of two ascertained laws. The first is, that sulphate of magnesia and chloride of sodium mutually decompose each other, at a freezing temperature; the second, the very rapid decreasing rate of solubility of sulphate of soda, from diminished temperature, while the solubility of common salt undergoes little change from this cause. The first law determines the formation of sulphate of soda at the expense of part of the common salt; while the second explains its deposition in crystals.—*Journal of the Philadelphia College of Pharmacy, Dec.* 1825.

82. *Discovery of Iodine in the mineral kingdom.*—Vauquelin has discovered Iodine in a mineral from Brazil, containing sulphur, silver, lead and carbonate of lime.—*Journal de Pharmacie, July,* 1825.

83. *Chemical peculiarities of the Saliva discharged during ptyalism.*—Dr. Bostock has recently made some experiments on saliva in the healthy state, which confirm his former results, that this secretion contains two animal substances, the one resembling coagulated albumen, being similarly affected by the action of nitric acid and potassa; the other, not affected by the agents which precipitate albumen, while it is precipitated by acetate of lead, and by certain salts of tin and silver. This latter substance may be called mucus. This analysis is further confirmed by coincident observations by Berzelius.

The saliva of patients, suffering under a full salivation, was found to differ from the healthy secretion, in containing, instead of mucus, uncoagulated albumen, or albumen as it exists in the serum of the blood.

After the most careful examination made with a view to detect mercury, not a trace of this metal was to be found in such saliva.

As not a particle of mercury is found in the saliva flowing during ptyalism, Dr. Bostock justly remarks, that the alteration of its nature must be produced through the medium of the system generally. Hence Dr. B. infers as probable, that the mucous secretions in every part of the body will undergo a correspondent change. This change consists in the conversion of mucous into serous or albuminous fluid.

Dr. Bostock has examined the fluid discharged from the internal surface of the stomach, in two cases of acute inflammation of that organ, and found it much more albuminous or serous than in its natural state. With respect to the urine, it is known that this secretion, in a morbid state, frequently contains albumen, and its presence is usually understood to be indicative of an inflammatory state of the sanguiferous system.

Viewing these facts, Dr. Bostock makes the following query: Whether we may venture to generalize so far as to refer to the same specific action, the influence of mercury on the salivary glands, the alteration in the mucous secretion of the stomach during inflammation, and the production of albuminous urine in peculiar conditions of the system.—*Medico-Chirurgical Transactions, Vol. XIII—Part I.*

The views of Dr. Bostock receive support from the circumstance, that the action of mercury is productive of albuminous urine. See Blackall on Dropsies.

84. *Emetic principle of the Asclepias Vincetoxicum, (tame poison.)*—M. Feneulle has lately ascertained, by analysis, that the emetic principle of this plant is peculiar, being different from emetin, discovered in ipecacuanha and certain species of violets.—*Journal de Pharmacie, July,* 1825.

85. *Comparative activity of Tartarized Antimony, as prepared by different formulæ.*—M. Henry, Sen. has ascertained, experimentally, the several quantities of sulphuret of antimony, precipitated by sulphuretted hydrogen from a given weight of various specimens of unpurified tartar emetic, and compared these amounts with the quantity precipitated from a very pure tartar emetic, as a standard.

Two parts of the standard preparation gave of sulphuret of antimony	1.04 parts.
While the same quantity of tartar emetic, according to the London Phar. gave	0.98
Dublin	1.00
Edinburgh	0.99
Paris Codex, (with glass of antimony)	0.68
Mr. Phillip's formula	0.74

All these preparations, however, when well purified, contain the same quantity of protoxide of antimony.—*Ib.*

QUARTERLY NOTICE
OF
NEW MEDICAL PUBLICATIONS.

A Treatise on the Physical and Medical Treatment of Children. By William P. Dewees, M. D., Member of the Philosophical Society of Philadelphia, and of the Philadelphia Medical Society, Lecturer on Midwifery, &c. Philadelphia. H. C. Carey & I. Lea. 1825. pp. xiv. 496.

On the utility of County Medical Institutions. An Introductory Lecture, delivered at the College of Physicians and Surgeons of the Western District of the State of New York, December 13, 1825. By T. Romeyn Beck, M. D., Professor of the Institutes of Medicine, &c. &c. Albany, 1825.

The Medical Recorder of Original Papers and Intelligence, in Medicine and Surgery. Conducted by Samuel Calhoun, M. D., &c. October, 1825. pp. 191.

An Exposition of the Natural System of the Nerves of the human body; with a republication of the papers delivered to the Royal Society, on the subject of the Nerves. By Charles Bell, Professor of Anatomy and Surgery to the Royal College of Surgeons, &c. &c. Philadelphia. Re-published by H. C. Carey & I. Lea. 1825. With plates. pp. 165.

The Institutes and Practice of Surgery; being the outlines of a Course of Lectures. By William Gibson, M. D., Professor of Surgery in the University of Pennsylvania, Surgeon and Clinical Lecturer to the Alms-House Infirmary, &c. Vols. 2. pp. 8vo. Published by Edward Parker. Philadelphia. 1825.

The first volume of this work was published in 1824, and we are happy that the whole is at length completed. We discover in it the characteristic excellencies of Dr. Gibson's style of teaching—a chaste and perspicuous composition, and a lucid arrangement; by which the matter, seldom marked by any thing strictly original, is so presented, as to form a useful compend for students attending the Professor's lectures, and witnessing the numerous illustrations by which his course is rendered truly valuable. The work, however, is too much of an "*outline;*" it requires too much filling up, to be very useful to the practitioner of Surgery, and we must regret, that Dr. Gibson has not devoted his talents and industry to a minute and scientific investigation of Surgical diseases. There is still too much empiricism in the practice of Surgery; it is time that Anatomy and Physiology were called into greater requisition, in forming the principles and therapeutics of this branch of the healing art.

The New York Medical and Physical Journal, No. 15. Conducted by John B. Beck, M. D., Daniel L. M. Peixotto, M. D., and John Bell, M. D.

The Philadelphia Journal of the Medical and Physical Sciences. Edited by N. Chapman, M. D., W. P. Dewees, M. D., and John D. Godman, M. D. Carey & Lea. November, 1825.

Memoir on Acupuncturation; embracing a series of cases, drawn up under the inspection of M. Julius Cloquet. By M. Morand, Doctor of Medicine. Paris, 1825.

Translated from the French, by Franklin Bache, M. D. Philadelphia. Published by Robert Desilver, No. 110, Walnut Street. pp. 87.

At the present moment, when the subject of acupuncturation occupies, in so considerable a degree, the attention of the medical public in Europe, as well as in this country, the publication of the little volume, the title of which appears above, must necessarily be acceptable. It presents a concise history of the operation, and an account of the proper method of introducing the needles. But, certainly, the most interesting part of the work, is that containing the results of Mr. Julius Cloquet's experience with acupuncture in various diseases, and the detail of many remarkable cures, effected solely by means of the needles. The translation was undertaken at the suggestion of Dr. Samuel Brown, late Professor of Medicine in the Transylvania University, and is written in a very correct and neat style.

Upon the whole, we are of opinion, that the work should be in the hands of every physician. Many of our friends, and Dr. Bache in particular, have had no inconsiderable experience with acupuncture; and we have, ourselves, used it in some cases with the most decided success; so that we need not fear to recommend a trial of this means in *proper cases*, as pointed out by Dr. Morand.

Report of the Committee on Law, to the Corporation of the City of New York, on the subject of Interment within the populous parts of the City. Read and adopted, at a special meeting of said Corporation, on the 9th of June, 1825, and published by their order. New York, 1825. pp. 75.

We have introduced this very elaborate and instructive Report in the list of *Medical* publications, although, by many, its title might seem sufficient to exclude it from such a place. Our reason for so doing, is, that it treats of a point of medical police, highly interesting to every member of our profession—the dangers of city interments. If this report, in conjunction with the recent translations, in New York, of Vicq D'Azyr, are not sufficient to convince the good citizens of that City, of the propriety of their late law, prohibiting interments within its precincts, we are at a loss to know what will serve to attain that end. It were well that our Corporation should take up the consideration of the same subject.

Journal of the Philadelphia College of Pharmacy. No. 1, for December, 1825.

We are happy to announce to our readers, the appearance of the first number of the above periodical work, conducted under the auspices of the College of Pharmacy in this City. When this College was founded, several years ago, we felt satisfied, that most important benefits would accrue to a branch of the healing art, too much neglected in this country; judging, as we did, from the zeal and acquirements of the gentlemen who co-operated in its establishment. Our expectations have been fully realized. Already have many ameliorations been effected in the usages and intercourse of apothecaries generally, in consequence of the wholesome regulations which the members of the College have imposed upon themselves. From the commencement, attention has been paid to the instruction of students of pharmacy, by means of lectures on the Materia Medica and Pharmaceutical Chemistry, by competent professors. Nothing appeared to be wanting, to complete the usefulness of the plan, but the publication of a Journal, emanating from its members. This desideratum is now supplied, by the publication now under notice; and, if we may be permitted to judge of the future work by the promise of the first number, our presage is highly favourable.

A Lecture, delivered at the opening of the Medical department of the Columbian College, in the District of Columbia, March 30, 1825. By Thomas Sewal, M. D., Professor of Anatomy and Physiology. Washington, 1825.

A Lecture, delivered at the opening of the Medical department of the Columbian College, introductory to a course on the theory and practice of Medicine. By Thomas Henderson, M. D., Professor of the theory and practice of Medicine in the Columbian College. Washington, 1825.

These two lectures were delivered at the opening of the new Medical School at Washington, last Spring. The rapidity with which institutions of this kind are forming in our country, is indicative of a love of science, and of a generous ambition; which, when properly regulated, will greatly contribute to the elevation of our professional and national character, and, at the same time, will enable us more effectually to reciprocate the daily benefits we are receiving from our European fathers in Medical Science. We sincerely wish them great success.

The Medical Formulary: being a Collection of Prescriptions, derived from the writings and practice of many of the most eminent physicians in Europe and America. To which is added, an Appendix, containing the usual Dietetic Preparations and Antidotes for Poison. The whole accompanied with a few brief pharmaceutic and medical observations. By Benjamin Ellis, M. D., Lecturer on Pharmacy. Philadelphia. Carey & Lea. 1825. pp. 148.

Of this little work, we hope to be able to furnish an analysis in our next number. Our present bounds forbid this; and we have only space to say, that it is a publication which was much wanted here, as a means not only of supplying examples of the simpler style of prescribing, which is so peculiarly American, and so successful, but of recording many fugitive formulas, to which the experience of enlightened practitioners has given an unquestionable value; while that reluctance and want of encouragement which withholds them from the press, bade fair, but for some such gleaner as this, to confine them within a limited circle, or to bury them in that grave which, one after another, becomes the dwelling-place of their inventors and employers. The "Formulary" is copious and redundant of such matter as this. The chapter on Dietetics will be welcomed. That on Poisons is so much abridged, as to be entirely useless.

An Essay on Venereal Diseases, and the uses and abuses of Mercury in their treatment Illustrated by Drawings of the different forms of Venereal eruptions. By Richard Carmichael, M. R. I. A., &c. With Practical Notes, &c. By G. Emerson, M. D. Philadelphia. Published by Judah Dobson, (Agent,) and A. Sherman. 1825.

This is a second and much improved edition of Dr. Carmichael's Essay on Syphilis. The American editor has added many useful and interesting notes to the text; by which the work is rendered very valuable to every practitioner. We do not hesitate to recommend a careful examination of its contents.

An Introductory Lecture, delivered in the College of Physicians and Surgeons, at the opening of the Winter Session, on the 7th of November, 1825. By David Hosack, M. D., Professor of the Theory and Practice of Physic, &c. &c. in the University of the State of New York.

Dr. Hosack certainly deserves considerable credit, for the zeal he displays for the advancement of the Medical Sciences, as well as for the able manner in which the present lecture is written. The plan adopted by some of the professors in our medical schools, of publishing their introductory lectures, is certainly deserving of imitation. In this way, much interesting matter is thrown into circulation; and the lecture, if valuable, does credit, not only to the individual who has penned it, but to the school of which he is a member. At any rate, it forces the professors to give something new; and their hearers are not fatigued, at every return of the season of instruction, with the same lectures, which, by frequent repetition lose all their interest.

ERRATA.

Page 3, 24th line from bottom, for *Patten*, read *Potter*.
9, 18th line, for *clear*, read *clean*.
13, 1st line, for *as is ordinary*, read *as ordinary*.
14, 5th line from top, for *colour*, read *colon*.
16, 1st line from bottom, for *anastomosis*, read *anastomoses*.
22, 3d line from bottom, for *real collections*, read *fæcal collections*.

THE

NORTH AMERICAN

Medical and Surgical Journal.

APRIL, 1826.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on Neuralgia, with Cases, by* J. TRENOR, M. D., *Dentist, of New York.*

UNDER this head, I wish to be considered as treating of the disease commonly known under the title of tic douloureux; and designated by writers, trismus dolorificus, autalgia dolorosa, dolor crucians faciei, with a variety of other appellations, as unnecessary, because unsatisfactory, as they are numerous. To Professor CHAUSSIER I am indebted for the generic name I have employed, pointing out its locality, by the addition of *faciei*, *digiti*, *brachii*, according as the face, finger, &c. may be the seat of the disease. There is not, probably, in the whole catalogue of complaints, one more painful or distressing; and I regret to be obliged to add, one less, or indeed so little understood by the profession. That this is the fact, an examination of the different essays on this affection, with which we have been favoured, will clearly evince. From them it will appear, that there is scarcely an article of any decided power in the materia medica, which has not been prescribed in this complaint; not with that certainty, which a correct knowledge of the nature of the disease and of the properties of the article employed, would justify, but with a hope, that in a course of experiments, something successful might be found. As might be expected, under such circumstances, we perceive the views of the writers, as to the nature of this affection, to be almost as diversified as are the articles to which they have had recourse for its cure. Some have attributed it to a cancerous acrimony; others to a deranged state of the stomach; a third believes its origin to be in the brain, and that the local pain merely stands in the relation of an effect; but from the cases which have come under my notice, I believe it to be, correctly speaking, a local disease; more under the control of local, than of general remedies. There can be no doubt, but that its rise, progress and cure, depend very often and very materially on the state of the general health; but this is saying no more than what may be said, with equal justice, of almost every other local affection. That it has been cured by general remedies is most certain; that these have frequently and totally failed, is equally so; but that this is a very roundabout way of coming to the point, I must maintain; and that one, more successful, and by which the general health is in no manner interfered with or deranged, is within our power, I hope to be able, hereafter, to establish.

On the history of this complaint I shall be somewhat brief. Although we cannot doubt it has existed in all ages and in all countries, yet the researches of the most industrious, have not been able to discover that it has been described by any of the Greek writers on medicine. It is said, however, to have been noticed by the Arabians. RHAZIS, we are informed, one of the most celebrated physicians of that nation, has transmitted to us a description of this painful complaint. As the chief object of these remarks, however, is to place before the medical community, what I believe to be, so far as my reading, and intercourse with professional men will allow me to judge, a new view of this complaint, it will scarcely be deemed of sufficient importance to enter at large upon its history. But I shall take occasion briefly to notice and discuss the several opinions which have been, at different times, held as to its nature.

Of its character. This is variously given by writers. I do not think we can be more accurate than by saying, it is characterized by painful spasmodic affections of the nerves, following a course from their expansions to a principal trunk; irregular in its attacks, short in duration, and more or less frequent in repetition.

Of its description, I shall be nearly as concise as of its history:

it is the less called for. as the cases I shall detail, will be found to contain what is most necessary or interesting in this particular. I will here merely advert to a circumstance, trivial in itself, but which, I suspect, has been erroneously considered a peculiar and singular attendant on this disease. It is this, that while the neighbourhood of the deranged part (seldom the spot itself) will bear, without awakening a paroxysm of pain, pretty rough pressure and examination with the hand, yet a very slight touch on the skin will bring on the convulsive twitches in their most acute degree. On further investigation, however, this does not appear altogether so unnatural, as we would, at first, suppose. If, in a person free from this, as well as every other complaint, a feather be gently drawn across the upper lip, a most unpleasant sensation is excited; whereas, the pressure of the finger, or any similar application, causes no manner of uneasiness. It is probable, that the delicate sensibility of the nervous extremities on the skin, is, in a great measure, blunted by the latter process, but by the former, materially augmented, and that under disease it must be so, to a still higher degree.

To neuralgia, elsewhere situated than on the face, I do not now further allude, than to say, that it differs from the latter only as to locality.

That part of the subject, which next claims our attention, though interesting, is certainly the most intricate, viz. the causes of neuralgia. These, authors pretty generally declare, to be unknown, except in those instances in which local injuries, as severe blows on the face or head, or other external violence, could be assigned. In several individuals, it was evident that a general delicacy of frame and nervous irritable state of the system, had for some time existed, previous to the manifestation of this local affection. Such a frame of constitution I look upon as particularly predisposed to this, as it is to many other troublesome complaints. But in many cases, no deviation from perfect health was obvious, for any length of time, anterior to the development of this disease. Under the head of exciting causes, we may place mechanical injuries, as already alluded to; and in addition I can state, that on strict enquiry, it was almost always discovered, that my patients had been exposed, immediately before being troubled with this painful disorder, to one or more of the usual causes of catarrhal complaints, particularly sitting in the draught of a window of an evening when there had been a sudden reduction of atmospheric temperature, combined with dampness or wet weather. The most exposed parts of the person under these circumstances, being the very parts we find deranged.

On the proximate cause of neuralgia, a greater diversity of opinion has been advanced, than in relation to any other part of the theory of the disease. Dr. J. Fothergill referred it to a cancerous acrimony; but, for a very fair and conclusive refutation of this position, the reader may examine Dr. Haighton's interesting paper on this complaint, in the Medical Records and Researches. Most authors agree in attributing the proximate cause to an arthritic diathesis. Cases are recorded by Dr. Lavagan, and likewise by Dr. Bohmen, in which the pain disappeared, when the gouty symptoms became developed. But Drs. Degener and Seibold state, that they had observed, at the place affected, a tumour, which they considered to be of the same nature as gouty affections of the joints. In one case of Dr. Hosack's, there seemed to exist a strong connexion between the two complaints. To all this it may be very properly remarked, in the words of the late Dr. John W. B. Murray, as recorded in his very interesting essay on Neuralgia, that "as this hypothesis is not applicable to every case, at least, as the gouty diathesis cannot be detected in many instances of neuralgia, it may safely be pronounced inadequate to explain the mystery." From the views I have formed of the proximate cause of the disease under consideration, I look upon its connexion with gout, merely so far as that this latter seldom shows itself, in a very decided manner, until that time of life when the system becomes less capable of resisting the causes of disease, and more susceptible to the influence of external agents, giving rise to a long list of ailments, as we every day see in the rheumatic affections of the joints, and similar states of derangement, with which those, who have passed the meridian of life, are so continually afflicted. I cannot by any means agree in assigning gout as its proximate cause, in consequence of the observation of Drs. Bohmen and Lavagan, that they found the pain, in neuralgia, to disappear, when the usual arthritic symptoms returned. We might as well maintain, that because a blister, externally applied, relieves internal pain and inflammation, ergo, the proximate cause of the internal complaint was the fly plaster, or rather the inflammation and discharge it had occasioned. It is nothing new, in the practice of medicine and surgery, that painful affections in one part of the body, are relieved and even cured, by the supervention of pain in another, although the latter is, in no other manner, connected with, or depending upon the former; and this I believe to be the most reasonable explanation of the cases above recorded.

By Dr. ARMSTRONG it is traced to a congestion, or an increased action of the vessels of the brain. This supposition, however, is by no means supported by any of the characteristics of the disease, as they are given to us by different authors; and, so far as my own observations go, I never have met with any appearances which, it seemed to me, could sanction this hypothesis. Such a state of the vessels of the brain, as Dr. ARMSTRONG points to, would be followed by a train of symptoms, that would quickly dissipate every doubt, as to the nature and seat of the deranged action, and such, I will venture to affirm, as the neuralgia we treat of, never has, and I suspect, never can present. The latest European publication on this disease we know of, is by Mr. JOSEPH SWAN, surgeon, and in reference to what I am now examining, his words are "Those local complaints, which appear to originate spontaneously, or in some cases, where a slight wound has been inflicted, I believe to be only symptomatic of a general irritability of the brain and nervous system." I have already remarked, that in most of my neuralgic patients, no perceptible deviation from the standard of sound health, was discernible, for any length of time, previous to the appearance of their painful complaint; and in this I am borne out by almost every writer on the disease. But the reason given by Mr. SWAN is not at all satisfactory. "The almost constant failure," he says, "of topical remedies, and of the division of the affected nerve, must lead to the conclusion, that the cause of the local diseased action, or the primary affection, must reside in some other part of the body," and he locates it in the brain; but as remedies addressed to this organ have also often and entirely failed, the ground, on which he rests his conclusion, becomes quite as untenable as every other doctrine which has been advanced. To those who believe its primary seat to be in the stomach, we present the same difficulties. Cases very often occur, where all the remedies which are known to have any influence over the actions of this viscus, have been, faithfully and perseveringly, employed without making any permanent or apparent impression on the neuralgic symptoms. Dr. Parry, I think, has come nearer solving the problem than any other writer I have met with. He supposes the pain to be owing to "increased vascularity or determination of blood, (perhaps amounting to inflammation) to the neurilema or vascular membranous envelope of the nerves affected." As, however, he admits, that this vascular membranous envelope "accompanies the nerves wherever they are distributed," and as neuralgia affects parts of a particular structure only, as I shall have occasion, hereafter, more particularly to notice, the views of Parry, however ingenious, are not competent to clear up the difficulty. To this doctrine I must again reply, when the diagnosis of the complaint we treat of, comes to be considered.

From every possible source of information, I am authorized in asserting, that neuralgia has seldom been known to occur, except in parts of a dense fascial or aponeurotic structure. The view, therefore, I have formed of its proximate cause (taking for example by far the most frequent seat of the disease, viz. the face) is, that it is an inflamed state of the periosteum of the bones, to which the nerves, involved in this disease, are distributed. The periosteum is, in its texture, very dense, and in an inflamed state of its vessels, does not admit of expansion so readily, or to the same extent, that fleshy or muscular parts do; and these remarks apply, with still greater force, to the bones beneath. When, therefore, inflammation arises here, the consequent tendency in the blood vessels to expand, being resisted by the unyielding nature of the periosteum above, and the still less yielding bone beneath, occasions a corresponding degree of pressure of the nerves of the part, giving rise to the painful symptoms of the disease. Let us see how far practical observations and positive facts will support this hypothesis. That the parts concerned are dense in their structure, and therefore unyielding in their nature, anatomical investigations conclusively establish. That in neuralgia, they are the seat of inflammation, a perusal of the cases, whose symptoms have been accurately recorded, will prove. In the one detailed by Dr. Jackson, of Boston, and which is celebrated for the immense quantity of the conium maculatum, taken within a given time, (amounting to three hundred grains in six hours!) the doctor tells us, that "the severe paroxysms were attended with a swelling of the gums of the upper jaw, which, from the feelings of the patient, seemed to be very considerable, but which on examination proved to be very slight." Nothing can more clearly elucidate what I maintain, than this very case. Had the parts involved, been more yielding in their texture, the patient's feelings of their enlargement, would have been less, but to the doctor's eye and touch it would have been much more considerable; because, in proportion as the parts resisted the inflammatory turgescence, in the same degree was the sensation of fulness and swelling to the patient's feelings augmented. In the case of Mrs. C., by the same author, we find among the symptoms he notices, a swelling of the gums in the jaw affected, and at times a redness of the cheek.

In one of the volumes of the Edinburgh Medical and Surgical Journal, a case is given by Dr. James Corkindale, who remarks, that at the seat of the disease, the patient "always complained of a sense of tumefaction." Without doubt, the most full and minutely detailed case in the whole history of the disease, is that of the late Dr. G. Jones, of this city. He was himself the unfortunate subject of his communication, and was almost a martyr to this complaint, for many years previous to his death. He tells us that "About the middle of July, 1806, I began to feel an uneasy sensation in the gum of the upper jaw on the right side, at a point whence one of the molares, in a lessened state, had a long time before been taken away;" and again he says, "the gum where the disease is seated, &c."* In all the examples of the disease given at the close of this essay, it will be seen, that an inflammation, not of the gums only, but of the periosteum of the bone, beyond the termination of the roots of the teeth, was noticed. One observation, I have constantly made, deserves here to be recorded; that the inflammatory aspect was by no means so marked, as, from the violence of the pain, I had a right to expect, and which the more pliant parts of our frame usually present. This may be a chief cause why the local derangement has been so much overlooked. From the violence of the patient's sufferings, we naturally look for most unequivocal appearances of derangement, but on examination, the blush of inflammation is so slight, and the swelling even still more so, that we are inclined to believe the patient had misconceived the seat of his disease—yet all this the structure of the part itself will satisfactorily explain. In addition to the foregoing proofs of local inflammation, in those instances in which the disease has occurred spontaneously, or from exposure to the weather, I could call attention to those derived from such instances where neuralgia has been brought on by blows, wounds, and other external injuries, as was evident in Sir E. Home's unfortunate case, as well as those related by Abernethy, Swan, Hosack, and many others. Stronger proof, however, can scarcely be required in establishing the point, that the part to which the patient chiefly refers his disease, is the seat of an inflammatory process.

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* See 2nd No. Vol. 1, of Coxe's Philadelphia Medical Museum.

Our next object is to ascertain, whether this local inflammation be the cause or the effect of the nervous affection. If it be the effect, then as such it ought always to follow a nervous derangement; and moreover we ought to expect, in every instance, a morbid change in the nerves themselves, similar to what takes place in rheumatism, and in the inflammation of the nerves which sometimes follows amputation, in both of which they are found more or less thickened, or otherwise deranged. But neither the one nor the other is the fact. I am in the constant habit of witnessing cases of the most recent standing, in which the inflammation and pain of the periosteum are quite slight, and in which the nerves affected in neuralgia give no indication of being, in any manner, implicated, until the disease has reached that degree of violence wherein the nervous affection marking it as neuralgia, begins to be developed. I ought also to remark, that an inflamed state of those parts is probably one of the most common local derangements to which we are subject; and when we consider how very much exposed the head and face are to all atmospherical changes, and the internal parts of the mouth, to numberless and constant vicissitudes of temperature, we are at no loss to account for the fact. All writers, who have traced the rise and progress of cases, tell us that their patients first complained of a local, circumscribed pain, which they could cover with the point of their finger, of about half an inch in circumference, and at this time slightly or even not, attended with nervous twitches. Another pretty strong proof that the spasm of the nerves is a secondary effect, may be derived from the fact that, where the operation of dividing the nerve has been performed, the symptoms hardly ever subside under from seven to twelve days. If this affection derived its existence and activity from the brain or general nervous system, and if the local complaint was merely sympathetic, then, on this latter being insulated from both by a section of the trunk of the nerve leading to the diseased part, the pain, &c. ought, at once, to disappear.

Neither is the strength of this position in any degree weakened by admitting the success of the operation, of which, in many instances, there can be no doubt. Indeed, in some cases where an incision has been made in order to effect a cure by a section of the nerve, and for this purpose only, I have very little doubt but that the cure has been accomplished, not so much by a division of the nerve, as by laying open the primary seat of the disease.* As to a diseased state of the nerves, it is expressly declared by Mr. JOSEPH SWAN, whose authority has already been quoted, that in dissections of subjects who had been affected with neuralgia, no thickening of the nerve, as is known to be the case where it has been inflamed, " or any alteration in its organization" was perceptible. As far then as the facts in relation to this disease are known, they go to prove that it is primarily a local affection of the periosteum of the bone, or of parts whose density of structure is very similar;—that the theory I have advanced, is a legitimate deduction from those facts, and competent to elucidate satisfactorily the character of the disease; and that it points to a course of treatment, heretofore, not pursued, but which has been in my own practice, thus far, entirely successful—possessing the double advantage of simplicity and certainty.

In forming our diagnosis of neuralgia, we are told by the writers on this complaint, that there are three or four diseases with which it may be confounded, viz. hemicrania, rheumatism, odontalgia, and by some, even trismus. From the first, the obvious seat of derangement appears, in all respects, sufficient to distinguish it; but I must be allowed to express my decided conviction, that where hemicrania affects the parts exterior to the cranium, it is essentially the same with the disease of the face, differing only in location; and equally manageable, by a like course of treatment. Nor do I entertain different views, of neuralgic affections of the extremities, in consequence of the peculiar structure of the parts, in which they occur, as I have already more particularly noticed, in my enquiries into the proximate cause of the disease.

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* See the case recorded in Vol. ii. of the Edinburgh Medical and Surgical Journal, by Mr. George Thilson.

In respect to cephalalgia, or where the parts next the bones of the head are diseased, it is often the consequence of a deranged state of the stomach and bowels, to which our remedies are to be addressed for its removal. In these, external pressure does not materially affect the complaint; whereas, hemicrania is much aggravated, if pressure be made immediately on the part affected. From rheumatism, much pains has been bestowed, in order to distinguish it, though I think to little purpose. It may be, and I am much inclined to the supposition, that the doctrine of Dr. PARRY, in relation to neuralgia, is very applicable to, and goes far in explaining the nature of rheumatism. If, in its acute form, this "vascular membranous envelope of the nerves,"* be the seat of inflammation, it will, in a great measure, clear up the obscurity in which the character of this painful disease is shrouded; inasmuch, as this vascular envelope "accompanies the nerves wherever they are distributed;"† and rheumatism is a complaint of the whole muscular system, as well as of the joints. Neuralgia, I have already stated, occurs in particular parts only. In chronic rheumatism, it is far from being unreasonable to suppose, that the inflamed vessels of this vascular envelope relieve themselves by a deposition of coagulable lymph, which deposition necessarily occasions a thickening of the nerves—a state, in which they are found, where this disease had existed for some time. This thickened state must render the nerves particularly sensitive, to even a slight expansion of the surrounding parts, which an increased vascularity, brought on by exposure to a change of temperature, would be likely to occasion. I have gone thus far, in order to mark what, I suspect, to be the true and only difference between rheumatism and neuralgia. Whether these views be correct or not, the same remedies however will be equally applicable in either case. From odontalgia, it is essentially requisite that the disease, which forms the subject of this essay, should be distinguished. I have repeatedly met with instances, where, from the shameful ignorance of a large majority of those, who follow the profession of a dentist, one, two, three, and even six, sound teeth have been, unnecessarily, sacrificed in this complaint; and after all, without any permanent or even temporary relief. The fact is, that in no instance ought a tooth to be extracted in a case of neuralgia of the face, nor indeed under any circumstances, except it be evidently decayed and its nerve unquestionably affected. But even where this occurs, if it be the incisors or cuspidati, by a practice introduced and successfully pursued, for many years, by my friend Mr. Hudson, of Philadelphia, they may be effectually preserved, without in any manner interfering with the curative process. I may be told, as I have often been, that although the tooth removed appeared perfectly sound, still it must have been the cause of the disease, as a cure very speedily followed its loss. But the benefit, in such cases, is owing to the hemorrhage the extraction of a tooth occasions; which benefit might have been obtained without such a sacrifice. In like manner, the complaint may terminate spontaneously, of which I have known instances, as well as of its having been relieved, or entirely cured by the supervention of some other complaint, as recorded by Bonnard and Lavagan, by the German translator of Dr. Fothergill's work, and by Mr. Joseph Swan. But no one will pretend to maintain, that we ought to leave this disease to take its course uncontrolled, with the expectation that it will terminate, in the manner just referred to. It would be equally, if not more improper, to place in our list of remedial means the removal of sound teeth. In cases, however, of decided toothach from decay of the tooth, at least with respect to the large and even small grinders, and particularly, if it be on the same side with the neuralgic affection, it ought, by all means, to be taken out; because the pain of the tooth cannot be very severe, or exist for any great length of time, without adding, in some measure, to the severity of the former. For these reasons, it becomes adviseable, that obscure cases of odontalgia, should be rendered as little so as possible; and I am forced to say, that in making this attempt, very little assistance has been procured from the writings I have had an opportunity of examining: they are generally confused, contradictory and uncertain.

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* See Dr. Parry's Elements of Pathology and Therapeutics.
† Ibid.

If the case, presented for examination, be quite recent, we are not to expect any material alteration from a healthy appearance in the gum, immediately around the tooth, unless, as not unfrequently happens, essential oils or similar substances have been applied to it. Where they have been used, however, there is little or no swelling, although very considerable redness; and the exterior covering of the gum is found raised in blisters, or, more frequently, entirely removed, and leaving a raw surface. The appearance of the tooth itself next claims our attention. If this be apparently perfectly sound, having as good a colour as those teeth, on the subject of which there can be no suspicion, we may then infer, that if decay exist, it must be in the parts on a line with, or below the surface of the gum. In pursuing our investigation here, an instrument sufficiently delicate towards the point, to pass freely between the teeth; flexible like a probe, and having the extreme point bent to a right angle, in order that it may catch in the cavity should there be one, will be found best to answer the purpose. This we are to pass round the tooth, against which, the bent point is to be scratched, and even to dip it a little under the gum. If a cavity exist, this will certainly catch in it; but if not, we may safely infer, that the tooth is no wise in fault, and ought by no means to be meddled with. But if the case be of long standing, and the tooth really in fault, we shall meet with more unequivocal symptoms, by which we may be guided. Under those circumstances, the gum is not unfrequently swollen and inflamed, the greatest enlargement being opposite the ends of the roots of the tooth; but with the enlargement of the gum, the pain of toothach subsides. If, in addition to this, there be a blue or blackish appearance obvious under the enamel, which will be more or less perceptible, when, as is sometimes the case, the decay extends considerably through the crown of the tooth, without its cavity being apparent, from its being situated where the tooth is close in contact with an adjoining one, we may presume the case to be more or less implicated; and proceed, forthwith, to ascertain the extent of these two defects. But, if none of these conditions be discernible, then we must proceed, as in the first instance. As to the particular kind of pain, such as darting or obtuse, which writers give as the distinguishing signs of toothach, we will find them totally inapplicable in practice, and entitled to no reliance. I do not think it necessary to extend these details of symptoms to cases, which would be clear to the most stupid or careless investigator. Although some few have mentioned trismus, as likely to be mistaken for neuralgia of the face, yet I believe that one who could commit such an error, must have a very limited notion of the importance of symptoms, in his enquiries into the character and difference of diseases.

I have hinted in the commencement of this essay, that in consequence of the obscurity in which the true nature of neuralgia had hitherto remained, its treatment resembled rather a course of experiments, than what is looked for, and what we had a right to expect, in the present improved state of surgical knowledge. An examination of the different methods of cure proposed to combat this painful complaint, will serve to justify this assertion; as we shall find that, for the most part, remedies have been directed to the removal of symptoms, to the neglect, in the great majority of cases, of the true disease, of which all these symptoms were only a secondary effect. A few remarks will suffice to illustrate this.

For instance, the most prominent symptom in neuralgia is a painful and spasmodic affection of the nerves; the nature of these affections is, in some measure, known to the profession, as are likewise the properties of such articles as exercise a controlling influence over them. To combat the former by the latter has been the principle on which, heretofore, the curative efforts have been founded. We would, accordingly, expect the chief reliance to be placed in narcotics, and never have they been more faithfully employed than in this complaint. At the head we may place the conium maculatum, which has been most extensively employed, and certainly has effected cures when given in very large doses; but it has so often so completely failed even when freely exhibited, that in the words of the late Dr. Jones, it can be considered " only as a palliative in this disease." Stramonium has got into some repute in the neuralgic affections of young females, although as regards those who do not come within this reservation, it ranks even lower than the preceding article. I do not find that the belladonna, although noticed among the articles prescribed, has been as much used as those already mentioned. Its effects are sufficiently known, however, to justify my declaring, that it is entitled to a very limited share of confidence. As in all other painful complaints, opium has been freely given in this: it has sometimes afforded temporary relief, but more frequently, even in the largest possible quantities, a momentary suspension of the paroxysm has not been procured. It has been so largely and universally employed, that we may safely assert, no reliance can be placed on it as a *curative agent* in this affection. By Dr. FOTHERGILL and others, arsenic has likewise been tried, and highly commended; but it does not appear that subsequent experience has enabled it to maintain the reputation it had once enjoyed.

By Dr. PHYSICK, of Philadelphia, the free use of emetics, and by Dr. WILSON and others, purgatives have been highly extolled, and this mode of treating the disease has certainly succeeded in many cases of even long standing. But, however flattering such success might appear, this method has not always realized, in the hands of others, the high expectations its introduction had raised. In short, cases every now and then occur, over which it exercises as little influence as any of the methods already enumerated. The powerful properties of the prussic acid seem to be quite useless in this complaint. The vol. tinc. of guaiac. has been given with success, but oftener without any benefit.

I have now gone through with, I believe, very nearly all of the different medicines which have, heretofore, been employed in the management of neuralgia, through the medium of the general system. I have not gone into the minutiæ of their exhibition, because this does not differ materially from the manner in which they are given in other diseases, but chiefly because I believe their administration to be altogether unnecessary in order to conduct, to a favourable termination, this distressing affection. Entertaining, however, the opinion of the nature of neuralgia, which I have endeavoured to support in the preceding pages, it becomes requisite to examine how far those articles, which are among the most powerful of the materia medica, can be taken in large quantities and for a considerable length of time, without material prejudice to the constitution. If I have succeeded in establishing the point, that the neuralgic affection under consideration is a local derangement, then it is pretty plain, that remedies, which act on it only through the general system, must be given in very powerful doses, and their administration long continued, before relief can be expected; and such really is the fact as to their exhibition whenever they have proved successful. It will hardly be denied that the most robust frame can scarcely undergo such a course of medicine without serious, if not permanent injury. I do not wish it to be supposed that the general health is to be overlooked in this disorder; on the contrary, I have already remarked, that there are certain states of the system which particularly predispose to this complaint; and that such require a tonic and invigorating course of treatment. But this is a very general indication;—equally applicable to every other species of indisposition—and rather preventive than curative. Neuralgia may likewise exist in a habit considerably above the healthy standard. In this case the antiphlogistic plan becomes necessary.

Local remedies I shall next examine; but with most of them I believe it is only requisite that they should be named, to remind the reader they are constantly used, but never have afforded the most distant prospect of effecting a cure. Such are stimulating embrocations, blisters, caustic issues, fomentations, and electricity. Leeches and scarifications, if properly employed, will always give temporary relief; and the division of whatever nerve seems principally to be affected, has upon the whole, more frequently cured the disease than, probably, any other single remedy, or indeed, than all the others together. But instances every now and then occur, in which this operation likewise, altogether fails; and others where the complaint is in this way arrested, but often recurs after the ends of the divided nerves have re-united. This will take place notwithstanding that a portion of the nerve has been cut out. The able professor of surgery in the college of this city, Dr. MOTT, has repeatedly divided the infra-orbitar nerve in neuralgia of the face, and I suspect in the hands of no medical man has this mode of treatment been more successful; but even under his judicious management the disease has returned, rendering a repetition of the operation necessary. In the case of Dr. JONES, he repeated it to the number of eleven times. Whatever could be done in order to remove the objections to this mode of treatment, that ingenious surgeon has effected;

but still scars will be left where the operation has been performed, and these scars must be increased either in size or number, whenever, as it but too often happens, a repetition of the division of the nerve becomes necessary.

For practical purposes the management of neuralgia may be arranged under three heads. First, where it arises in individuals, enjoying, in every other respect, apparent sound health. Second, in persons of a plethoric habit, particularly with a determination of blood to the part affected. And third, in such as are of a nervous temperament, whether this be the effect of disease or of original constitution.

The treatment of the first class is very simple. The complaint as I have endeavoured elsewhere to establish, consists in an inflammation of parts of dense structure; of course the obvious and most speedy remedy is to lay the inflamed part freely open with a lancet.* Where the cheek, the most general seat of the disorder, is affected, the operation is performed from under the lip; thus doing away the necessity of causing the unsightly appearance of scars on the face. The part to be operated upon, is that from which the nervous twitches commence, and to which the patients will almost always direct your attention as being constantly the seat of more or less pain. If these indications do not exist, as sometimes happens, then the proper place on which to operate, may be found by passing the finger under the lip, and pressing with some degree of force on the periosteum of the maxillary or molar bones. The moment the diseased part is touched, the patient immediately exclaims, and sometimes by this alone the convulsive twitches are excited. This is the spot I lay open to the bone—dividing freely and to some extent the periosteum. The operation is always attended with considerable pain—much more indeed than when performed on the same parts in a healthy state; but in the course of half an hour or less, this inconvenience vanishes. If the disease returns, a repetition of the operation is attended with but trifling annoyance, and if it be a local complaint, liable to be brought on by the usual exciting causes of colds, its return ought not to surprise us, particularly in delicate or nervous habits.

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* Since the above was written, I have read with great pleasure, Dr. J. K. MITCHELL's note in the 1st number of this Journal, p. 227. His remarks go strongly to prove the soundness of the views I have laid down as to the true nature of this heretofore obscure complaint. I think it probable the treatment he recommends, may be resorted to, with great advantage, when the disease is located in the extremities, where some risk might attend deep incisions.

Where the complaint arises in those who come under the second head, in addition to what I have already detailed, it is also requisite to bring the system down to a natural or healthy standard, as otherwise the local operation will produce but a temporary effect—at least, slight exposure to variable damp weather will be very apt to reproduce the patient's sufferings. The medical maxim of reducing an over excited system to, or a little below, the natural standard, in the treatment of acute local derangements, is to be particularly borne in mind in the case before us. It is not necessary that I should here detail the manner in which this is to be effected, as the first case given is sufficiently minute in this particular.

With respect to the third class or those of the nervous temperament, it is to be observed, that it is that habit of body which is beyond all comparison the most frequently affected with this species of indisposition. In some cases it is not improbable but that the loss of tone in the nervous system has been a consequence of long continued suffering from the complaint; but in a very large majority of instances the reverse of this is the fact. This general irritability of the nerves is observed to have existed for a period more or less extensive previous to the development of the disease under examination. As it is in this class of individuals that neuralgia is more frequently met with, and as this debility of the nerves is in general brought on by a weakened or otherwise altered action of the stomach, it was very natural to refer the primary cause of neuralgia (in the obscurity in which its nature has heretofore been enveloped) to the unhealthy state of this viscus. Such are the views at the present day of the celebrated ABERNETHY, of Dr. WILSON, and likewise of Mr. HUTCHINSON, who has evinced great ardour in investigating the nature of this affection. But it appears to me probable that this state of the stomach is productive of the disorder of neuralgia, in no other way than by occasioning such a highly susceptible state of the nerves, as renders them extremely sensitive to even a slight irritating cause, and of course particularly so when there exists an inflamed state of those parts in which we always find the disease to be located.

Our first step towards a cure in those who fall under this head, is to have recourse to the operation as already explained, which, so far as my own experience goes, will be found immediately to arrest the progress of the complaint. But in order to remove the diseased sensibility of the nerves, and thus do away their extreme susceptibility and consequent liability to a recurrence of the disorder, a course of tonics, as advised by Mr. HUTCHINSON, Mr. SWAN, and others, becomes necessary. If the practice laid down by either of these gentlemen be indiscriminately pursued, it may be easily seen that as applied to those who come under the first head, it would at least be useless, and that if the sufferer be restored to health, it is a spontaneous cure; a termination I have had occasion elsewhere to notice, as being by no means rare, and for which the intended remedy ought to be entitled to no credit. As respects those who constitute the second class, a course of tonics must obviously be improper; and in reference to those who form the third, it is necessarily a very roundabout method of effecting a cure, and must sometimes, (as it is well known it but too often does,) totally fail. As already stated, the disease not unfrequently spontaneously subsides. In other instances, however, although the local inflammation which occasioned the complaint may have passed away, yet the deranged impression made on the nerve or nerves of the part shall continue. Indeed it is not unreasonable to suppose, that in many of those cases of long standing, the disease is kept up chiefly, by this very disposition which it is well known the nervous system possesses, of continuing an action, healthy or diseased, once implanted.

I have known one or two instances in which the pain of neuralgia has been excited at intervals of from one to three or four weeks, the periods, however, very irregular, but with nearly entire cessation from pain during the intermediate days. As no very obvious cause could be assigned, the circumstance seemed at first inexplicable. But strict inquiry led to the discovery that the arterial system was always more or less excited on these occasions, owing probably to slight errors in diet or something of that nature. While the pain continued, whatever produced a determination of blood to the part affected, (the head,) invariably aggravated the patient's sufferings, such as stooping, which he was always most careful to avoid. This morbid sensibility of the nerves, it is very fair to presume, a course of tonics or narcotics has, in numberless instances, removed, and thus served to sanction the authority of those who assert that these are the proper medicines to be prescribed for the cure of this distressing malady. The fallacy of this hypothesis is too obvious to require a formal refutation.

Acupuncturation has lately got much into vogue as a remedy in this disease. It has been pretty freely tried in many diseases, not merely in neuralgia, but in any and every species of derangement, in which a chance of success could be anticipated; and the assertion of the French experimentalists, that the benefit which the needles confer is through a galvanic influence, is not only plausible, but reasonable. Indeed we were prepared in some measure to coincide with this view from the previous notices we had had of their use by Dr. Haime of the Continent, and by Mr. Churchill of England, who declare that in inflammatory cases they are not only useless but injurious. In like manner, where a thickened state of the nerves follows inflammation, it is not easy to conceive in what manner they could prove beneficial. But where a mere morbid sensibility remains after the inflammatory action has subsided, such as I have just remarked to occur in neuralgia, I think it highly probable that acupuncturation will be found serviceable.

The cases which follow will point out so fully the manner in which I have been in the habit of proceeding, as to render a more minute detail in this place unnecessary.

Case the first, of Mr. W. B. December 8, 1823. He is of a very full habit; about 55 years of age; has always enjoyed very good health, not being troubled with any particular disease, and seldom suffering from even slight indispositions. In the month of August last, while at his place in the country, he was much exposed (from necessity and inattention,) to the influence of the weather, which happened at the time, to be very variable, as to the degree of temperature, and also combined with dampness and a good deal of rain. In consequence of this, he was attacked with a pretty severe cold, which affected his head chiefly, attended with occasional shooting pains through his jaws, extending up the side of his face, and likewise affecting apparently the roots of his upper back teeth, particularly on the left side. By some trifling medicines, low diet for a few days, &c. he got entirely rid of the unpleasant fulness of his head, and all other disagreeable symptoms, except the shooting pains through the jaws. These were not however, often repeated during the twenty-four hours, or very severe, consequently, they were not materially regarded, expecting they would gradually subside in a few days. But this did not prove to be the case; on the contrary, they evidently grew worse. His general health, however, being very good, the complaint was permitted to take its course without restraint. On his return to town, in the month of November following, it had become extremely troublesome from the increased frequency with which the paroxysms recurred, but much more so from the great increase in the violence of the pain. Still, however, from an aversion to place himself under medical restraint, and also from some unnecessary apprehensions with which his mind became influenced, he persevered in delaying to apply for medical assistance. His complaint continued to get worse, until the month of December, when he applied to me for advice. His sufferings were now excruciating. A paroxysm consisted of one, two, and sometimes three violent nervous twitches; commencing immediately around the malar process of the left superior maxillary bone, where it was very severe—extending as far back as the third molar tooth, but being most intense opposite the ends of the fangs of the first large grinder, from which it darted up towards the internal canthus of the eye, which was considerably inflamed, attended with constant overflowing of tears from the under eyelid, which was drawn down by the repeated contraction of the muscles.

The infra-orbitar nerve, as it passes out from its foramen, was evidently affected, and the muscles perceptibly and painfully agitated at every paroxysm. The pain extended likewise up to the temple, and appeared to diffuse itself over the fascia, from which the external surface of the temporal muscle originates, and by which it is covered. Over the parts I have described the pain was most agonizing. The corresponding side of the face was also a good deal but by no means so acutely affected,—the basis of the lower jaw on the left side was likewise involved, but in a still slighter degree. But the extension of the complaint to the two last situations, had only happened within three or four days previous to his present visit to me. While Mr. B. was giving me these details, he was interrupted twice or thrice, by a recurrence of those painful nervous twitchings, which were so extremely severe as to cause him to raise his hand suddenly and inadvertently to the side of his face and press the parts with considerable force, which mitigated in some degree their violence. On attempting to examine his back teeth, one of which he imagined must be decayed, and which he believed to be the cause of his complaint, my hand being rather cold, and the end of my finger accidentally touching the first large grinder of the left side, it immediately excited an acute paroxysm of pain. He then told me that whatever he took into his mouth, particularly fluids, either above or below a moderate temperature, invariably brought on several severe attacks. He had been in the habit for some time past, of taking a short nap just after dinner, and about the dusk of the evening, as he sat in his chair; but latterly as sure as he began to dose he was aroused by his unwelcome companion. This was likewise the case during the night. The warmer he got in bed, the more acute and the more frequently repeated were those attacks. Being, as I have already said, of a very full habit, I thought it adviseable to make some reform in this particular, although he was altogether free from general fever. Having lanced his gums very freely around all those teeth to which the disease appeared to have extended, I directed him to be very abstemious in his diet, and on returning home, to take of tar. potas. et sod. ℥ jss. and to let me see him the next day, unless he found himself materially relieved, in which case he might postpone his visit until the second day.

10th. Hoping that the quantity of blood drawn from his gums would have sufficed for a cure, he had postponed taking the salts until the morning of the 9th, when not experiencing any relief, he took it and it operated very freely, without any appearance, however, of amendment in his complaint. His gums were again freely lanced; he was directed to pursue the same course of diet, and to repeat his medicine on the morning of the 11th, unless he found himself much better. 12th. The severity and frequency of his attacks are not at all diminished. His gums were again extensively lanced, and as his low diet and copious evacuations had not made any very great impression either on his pulse or strength, he was directed, if no abatement should take place in his symptoms, to repeat the following morning, the same opening medicine, or take a sufficient quantity of calomel and jalap.

14th. Still no relief, as to the left upper jaw, face, and side of the head; but the lower jaw of the same side, and the upper jaw of the opposite side, are not so painful. As some little relief appears to be gained by the course pursued, I determined to continue it; and, therefore, again had recourse to local blood-letting from the gums and to his former purgative. 16th. He thinks the affection of the left side as severe in every respect as it was at his first visit, although a very low diet has been observed; every other day free alvine evacuations procured, and the gums lanced in every direction until they have the appearance of being cut to pieces. Indeed I should be fearful of pursuing it much further, lest they would not unite. This course, as might be expected, has brought down his pulse considerably. His former drowsiness and tendency to sleep after dinner has entirely left him, and he also begins to observe, that any considerable exertion, or walking for half an hour, is followed by a good deal of weakness and lassitude. Every thing seems to indicate that general depletion has been carried as far as the case would sanction; but the chief cause of distress is in no apparent manner removed. In examining the affected part this morning, which I did with much minuteness, I discovered that one spot of the periosteum of the maxillary bone between the malar process and the nose, pretty high up on the cheek, was extremely sensitive whenever touched, and had a puffy feel to the finger; whereas, in a healthy state, those parts are quite firm and unyielding to the same degree of pressure. Not having noticed this before, I was induced to repeat my inspection of it several times. Whenever it was touched even slightly, a return of the painful spasm more or less severe was always excited. When compared with the same parts in a healthy state, the sensation to the finger was very different and peculiar. Under these circumstances, I determined to try what benefit would be derived by laying this diseased spot freely open with a lancet, under an impression that the complaint might be what every subsequent opportunity of testing it seems to confirm. The incision was acutely painful, more so than all the others I had previously made on the gums, combined; and the flow of blood was pretty copious. The relief was almost instantaneous, and although he remained half an hour with me, he continued perfectly free from the distressing affection of the nerves, or indeed, any other inconvenience than the smarting which necessarily attended the wound I had made. 17th. Since his last visit, he has had but one very slight twinge, so extremely trifling, that under other circumstances it would not have been noticed. As it had occurred only a short time before he called, I determined to renew the incision of yesterday. It bled with some freedom, but with it all traces of this troublesome, painful, and distressing complaint vanished. He gradually returned to his customary course of living, and has ever since remained perfectly well.

This case is worthy of note, as showing how little is to be expected in severe and strongly marked cases of neuralgia of the face, from lancing the gums only; it is quite inadequate to produce any benefit except in the forming stage of the disease. In the foregoing instance, it removed the affection from two of its seats, but the third it was quite incompetent to cure or even to afford a temporary alleviation of its severity. This precisely agrees with what others have observed as to the benefit of remedies applied to the gums—these are not the seat of the disease.

Case 2nd, of Mrs. H. whom I was requested to see in March last. She was about thirty years of age; of a tolerably strong, healthy constitution, although after her confinements, she is subject to some slight nervous complaints. I found her in her room, which she had not yet left after her accouchement. She complained of an extremely severe painful affection of the right side of her face, extending over all that side of her head likewise. She had been troubled with it for the last two weeks, and for it had been cupped; had taken all along the mineral tonics, and was at the time of my visit, still suffering from the effects of a blister, which had been applied solely with a view of relieving her from this painful and extremely troublesome complaint. It is about six weeks since her confinement, previous to, and since which, her nervous system has been a good deal deranged; but relief had been obtained from all her inconveniences except the present one. Here the remedies above noticed had made no impression whatever. Her rest, at night particularly, was so much broken in upon, (for it was then far more troublesome than at any other period of the twenty-four hours,) that both her family and physician became very apprehensive, that from this circumstance alone, something, even more serious than her painful complaint, might be the consequence; and, hoping that the cause of what had proved so untractable might be some defect in her teeth, requested me to visit her. After the strictest examination of her teeth, however, I could not detect any thing to which her present sufferings could be attributed. I then examined the part from which the pain immediately proceeded. It was situated as high up as the point of the root of the eye tooth, and over that of the first small grinder or bicuspid, extending upwards and outwards towards the right temple, and pretty generally over all that side of the head; affecting likewise her ear. In this instance the soft puffy feel was by no means as perceptible as in the previous case, still there was a sensation under pressure from the finger, partaking much of that character, and quite different and distinguishable from a healthy state of the parts. The slightest pressure invariably excited all that acuteness of pain which so strongly characterizes this species of indisposition.

Feeling somewhat confident as to the nature of the complaint, and the probability of a cure, not only from the success of the case which precedes this, but from two others very similar, which had already fallen under my notice, I told her I could very speedily, and with considerable certainty, give her relief. On the spot which to the touch was so very painful, I inserted the lancet, and made a very free incision, both right and left, to the bone. In this way I completely divided that part which was so tender to pressure. The operation, as in the case already detailed, was attended with considerable pain, which, however, soon subsided. The quantity of blood which escaped did not amount to more than two table-spoonfuls. I left her with the request that if she was not entirely relieved, I might be sent for the next day. I did not, however, again see or hear from her until August following, when she paid me a visit, to request I would remove a tooth which, she believed, had caused her a great deal of pain for the last four or five days. On examination I could find no defect in her teeth sufficient to account for the inconvenience she was experiencing. But on passing my finger with some degree of force over the part I had operated upon in March last, she immediately exclaimed, that was the spot from which proceeded her present sufferings. Having explained to her the nature of her complaint, and that it was of the same character with that for which I had been requested to visit her in the spring, I proposed a similar operation, with perfect confidence of success. But she candidly confessed to me her doubts of being relieved by what I now proposed to do; as well as her disbelief that it was to the operation she was indebted for the benefit she had experienced on the former occasion; simply because the relief, from a state of extreme and almost constant pain, was so entire and so immediate, that she could not believe that, or comprehend how, an operation, comparatively speaking, so trifling, could effect so sudden and so desirable a result. She declared at the time that within half an hour after the operation had been performed, every unpleasant feeling had entirely left her; and that she had not been in the slightest degree troubled with any similar affection until within the last few days, when the inconvenience of which she now complained, and which had subsequently increased in violence, began to make its appearance. From her answers to interrogatories, it was clear that the present re-appearance of her complaint was owing to exposure to a current of air from a window, near which she was seated the greater part of an evening. It was at her country house. As she was willing, however, to submit to what I proposed, and if successful to give to the operation all the credit to which it was entitled, I applied the lancet as before, and laid the part which indicated much pain to slight pressure, freely open. It bled freely, and even more than on the former occasion; owing, no doubt, to her habit being now much more full; for, with the exception of the affection of her face, she was now in the enjoyment of very good health. To the eye, in all that part which was obvious on elevating the upper lip, the injection of the blood vessels was very little more than what a healthy appearance would present. The incision was now, as formerly, exquisitely painful; but this soon ceased entirely; nor has she as yet had any recurrence of her complaint.

I thought this case varied so much from the former as to be worthy of particular notice. It will be seen by it that exposure re-produced the disease, although in every other respect the patient's general health, as well as her nerves, were much stronger than when she had been formerly attacked. If the view which I have taken of the complaint be correct, we should not be surprised to meet with instances in which the affection is re-produced; neither can it throw any doubt over so simple a mode of treatment. During the summer, but particularly since the weather has become very changeable, I have had several other cases, but as they did not present any circumstances to distinguish them particularly from the foregoing, it does not appear necessary to give them in detail. As the case which follows, presents some features by which it differs from the preceding, it may not be uninteresting to give it in full.

Case 3d. Mrs. W. paid me a visit by direction of a most respectable medical gentleman of this city, under whose care she had been for the last three months, for a most painful affection of the left side of her face, presenting all the characteristic marks of *tic douloureux*. She was about thirty years of age, and naturally of a very delicate constitution, though not subject to any particular complaint or disease. For the disorder in her face she had undergone a course of tonics—had been cupped repeatedly in the neighbourhood of the diseased part, and had likewise been blistered; but so far from any improvement taking place, she had become within the last fortnight, very considerably worse. When first attacked, her sufferings did not continue longer than from a day to a day and a half; the paroxysms constantly succeeding each other, then subsiding, and leaving her entirely free from pain or inconvenience for a week or ten days. Latterly, however, her attacks had become more frequent, more intense in their character, and of much longer continuance. This had brought on great mental distress, even when entirely free from local pain, from an apprehension that the rest of her life was to be passed subject to continual repetitions of this acute disorder. Being naturally timid, she had become almost a martyr to her fears and sufferings. When she was not experiencing the latter, her energies and strength were completely prostrated by the former. In this way she went on from day to day in a state of wretchedness hardly credible. She had lost all relish for every kind of amusement; nor could she give her attention to any subject unconnected with her complaint.

As she was naturally of a rather delicate and nervous temperament, I found I should have greater difficulties to contend with in this than in any former case. On examining the part where the pain always commenced, I found it evidently inflamed, but certainly not so much so as the violence of the sufferings would have led me to expect. What is properly speaking, the gum, was in this instance more the seat of derangement than in any previous case I had witnessed. But all the teeth in the neighbourhood were perfectly sound. The slightest pressure on this part, caused the pain to dart with the greatest rapidity towards the inner angle of the eye, to the temple, and over all that side of the head. In this spot I inserted the lancet and laid it freely open to the bone. It was followed by a pretty considerable discharge of blood. In order to counteract the effects of her delicate habit, I gave her such directions for invigorating her health and strength, as her case seemed to call for. But these are circumstances so well understood by the profession as to render their detail in this place unnecessary. The operation here, as in all other cases, was extremely painful; but this subsided even before she left me. Having endeavoured to inspire her with perfect confidence in the certainty of a speedy and complete cure, I dismissed her, telling her however, that the lancing might be necessary once or twice more should the pain again recur; in which case she was to visit me immediately. I did not see her again for nearly seven weeks, when she called to tell me, that after the necessary effects attending the operation of lancing had subsided, she had remained totally free from pain or inconvenience of any kind; and such I have every reason to believe is the case up to the present day.

Since the visit of this lady I have had three or four other cases, in two of which the persons were attacked only at night, after they began to get warm and comfortable in bed; the pain then became so intense as to prevent them from enjoying repose until morning, when it gradually left them and they fell into a sound sleep. In one of these individuals, on two or three occasions, the violence of the attack obliged her to walk her room the whole night. Neither laudanum, nor any thing else to which she could have immediate recourse, seemed to exercise any influence over her suffering. In all these cases one simple incision was fully competent to a complete cure. It is to be observed that the operation is performed by raising the lip; of course no scar on the face is caused. But if the disease be situated where an external cut cannot be avoided, as on the back or side of the head, or in the extremities, the indication in all instances is to lay open that spot where the pain seems invariably to commence, and which, generally speaking, is quite tender on pressure. The general health of the patient ought by no means to be neglected, as by a proper attention to this, a recurrence of the disease may be prevented; which is even more desirable than to be able to effect a cure.

ARTICLE II.—*On the use of the Oil of Turpentine, in a particular condition of fevers.* By GEORGE B. WOOD, M. D., Professor of Chemistry in the Philadelphia College of Pharmacy.

By those who believe in the specific nature of diseases, and in the specific action of remedies, it has always been considered an object of primary importance, to ascertain by repeated and accurate observation, to what precise symptom, or combination of symptoms, any particular medicinal agent is especially applicable. To a want of such discrimination, it is, I believe, generally attributable, that different physicians meet with such different success in the use of the same remedy in the same complaint; and he who discovers and introduces to the notice of the public a new medicine, or a new application of an old medicine, may frequently blame his own insufficient or inaccurate description of the precise circumstances under which he has found it useful, for the discredit into which it is so liable to fall with the rest of the profession.

The design of the present communication is to point out a certain condition of fever, in which the author believes he has found the spirits of turpentine peculiarly beneficial. This remedy has long been used, with much advantage, in low forms of fever, as a simple stimulant; and it has recently been the fashion to prescribe it in cases accompanied with stomachic or peritoneal inflammation, in the yellow and puerperal fevers, for example, as a counter-irritant. But at present, attention is called to it in neither of these capacities.

It is well known to every physician of moderate experience, that in our protracted remittents, the tongue, instead of cleaning itself gradually from the edges, occasionally throws off the fur at once, in large flakes from its surface, which is left red, sore, and of an almost glassy smoothness, totally unlike the natural papillary structure. This appearance will, in almost every instance, be found the harbinger of convalescence, which, however, as may readily be conceived from the condition in which the mucous lining of the stomach and bowels is left, must be slow, and liable to occasional interruptions.

But sometimes a disposition may be observed in the tongue thus suddenly to throw off its fur,—the operation may even have commenced and proceeded to some extent, so that a considerable patch of smooth denuded surface may be presented, when suddenly the process ceases, the tongue, if before moist, becomes perfectly dry, and a train of alarming symptoms sets in, which, if not speedily arrested, conduct the patient to almost certain death. I have repeatedly seen instances of the typhus mitior or nervous fever, in which a portion of loosened fur in the middle of the tongue had given me hopes that a favourable crisis was approaching, when the suspension of the clearing process, and the occurrence of a harsh aridity, have given me evidence that the force of disease was overcoming the efforts of nature, and my patient has sunk at the very moment of anticipated recovery. The symptoms which accompany or immediately succeed this unpleasant change, are tenderness and slight distention of the abdomen, dark and offensive stools, high coloured urine, a dry and harsh skin, frequent and feeble pulse, wandering intellect, and an anxious, suffering expression of countenance.

Stimulation with carbonate of ammonia and wine-whey, the use of blisters, of opium and purgatives, combined sometimes with serpentaria and peruvian bark, the malt liquors, and nourishing food—remedies which my own studies had suggested, or which were recommended by physicians in consultation, have often proved utterly ineffectual; and the occurrence of tympanitic abdomen, hiccough, and constant low delirium, has proved the immediate precursor of a fatal issue. In one instance, intense abdominal pain occurred toward the close of the disease, and all the symptoms of violent peritoneal inflammation were presented.

Examination after death discovered the effusion of the intestinal contents into the cavity of the peritoneum, and one or more large ulcerated openings in the lower extremity of the ileum, plainly indicated the passage through which they had escaped. The inflammation resulting from the presence of this foreign matter, had given rise to effusion of coagulable lymph, which covered the external coat of the bowels, and had begun to produce adhesions.

On opening the ileum, its mucous surface was found ulcerated in many places, and the source of the mischief was thus clearly developed. As in this case the occurrence of unpleasant symptoms had been simultaneous with that abortive effort in the tongue, before noticed, to discharge its load, I was led to the supposition that this last appearance might be indicative of the commencement of the ulcerative process in the mucous surface of the intestine. The use of balsams and terebinthinate remedies has proved eminently serviceable in certain states of obstinate chronic diarrhœa and dysentery, in which there was reason to suspect ulceration of the bowels; and an obvious explanation of their operation was, that by their immediate contact with the ulcerated surface, the morbid action was subdued, and the parts allowed to heal. It required no great exertion of ingenuity to transfer the same reasoning to the cases of fever which I have described, and on the first opportunity which presented, I prescribed the spirits of turpentine, in the form of julap, in the usual dose of ten or fifteen drops, frequently repeated. The case in which it was given, I had considered almost hopeless; but twenty-four hours had not elapsed before a decided change for the better had occurred, and in a few days the patient was convalescent. The same result has been obtained in other cases of a similar nature, and at present I approach this complication of unpleasant symptoms, not indeed with an absolute certainty of success, but with the confidence which an experience, generally successful, inspires. It is true that I seldom trust the cure to the spirits of turpentine alone, but make use of whatever auxiliary measures the symptoms appear to demand. To this remedy, however, the chief credit is, I think, undoubtedly due, for before its employment, the best plans of management which had been suggested often proved abortive.

To the imperfectly denuded and arid state of the tongue, which was among the first and most obvious signals of danger, succeeds, by degrees, a new moist brownish or yellowish-white coat, spread evenly over its surface. With this change, an amelioration of the other alarming symptoms is gradually experienced. The tension and soreness of the abdomen are diminished, the discharges assume a more natural appearance, the pulse is lessened in frequency and increased in force, moisture often covers the skin, and the mental alienation vanishes. The new fur now slowly begins to disappear, and the patient recovers, as from an ordinary attack of fever.

It cannot be as a stimulant simply, that turpentine acts in this form of disease; for the principal danger is obviously not in the prostration of the patient, and the requisite degree of stimulation may readily be obtained from wine or the volatile alkali. In the ordinary prostrated cases of typhus, it often does much good by its powers of exciting and maintaining the vigour of the circulation, and may be used with great advantage in alternation with other medicines of the same class; but in the particular condition of fever which I have endeavoured to describe, its place can be supplied by no other remedy, and though the theory of its operation, upon which I ground its employment, may be defective, it must certainly be allowed to exercise, in some way, a specific influence over the disease.

ARTICLE III.—*Remarks on the abuse of Blood-letting, in Recent Accidents.* *By* REYNELL COATES, M. D.

A popular prejudice in favour of the employment of venesection, immediately after the occurrence of severe injuries, prevails to a great extent, and has been productive of serious mischief in many cases which have fallen under my notice.

To do away with opinions deeply rooted in the minds of the vulgar, is a task of great difficulty, and it can only be accomplished by the persevering and continued exertions of enlightened men. A Medical Journal, confined in its circulation within the limits of the profession, is an instrument ill calculated to compass such a design. The prejudice of which we speak has, however.

established itself among medical practitioners, and it is by no means an unfrequent occurrence to meet with cases in our public institutions, in which the treatment has been rendered much more difficult, and the life of the patient endangered, by the improper abstraction of blood immediately after recent accidents. This may be in part accounted for, by the extreme anxiety with which the friends or spectators entreat or even demand the employment of the lancet. The young practitioner, unused to the confusion of the crowd, and bewildered by the extreme distress of the friends or relatives of the injured person, frequently finds himself dispossessed of that cool and undisturbed presence of mind, so necessary at such a juncture; and yielding to the torrent, he pursues a practice, which, at a calmer moment, his better judgment would lead him to condemn.

It is universally known, that after every extensive injury, the system remains in a state of collapse for a longer or shorter period, according to the circumstances of the case. During the continuance of this deficient action, it is often necessary to have recourse to the proper measures for supporting the temperature of the body, while we employ, with freedom, the most powerful stimulants—wine, brandy, or even the volatile alkali, in order to rouse the latent energies of the system. By pursuing these measures we frequently succeed in saving the life of the patient when in the utmost danger. The necessity of resorting to this plan is so evident in the generality of cases, that it needs no comment. What, then, will be the inevitable consequence of a treatment diametrically opposite?

Notwithstanding the obvious impropriety of employing venesection during this state of collapse, I clearly recollect the history of several cases in which it was resorted to by professional men, whose residence in our metropolis had given them superior advantages in the acquisition of surgical information.

The following notices are given as illustrative of the effects. A man was admitted into the Pennsylvania Hospital in the year 1823. He stated that he had fallen from a height of about ten feet, and that the Physician who was called, had bled him immediately, until he fainted.—With the exception of the jar, this man had been very slightly injured; but, in consequence of the unseasonable bleeding, the pulse at the wrist remained imperceptible for several hours, and the patient recovered very slowly, under the employment of volatile alkali, brandy, and other stimulants. He left the house after several weeks had elapsed, pale and enervated, and it was probably long before he regained his natural vigour.

A patient was admitted into the same institution, (date not recollected,) who had been suffocated by descending into a neglected well. In a few minutes after he was raised into pure air, his breathing began to be tolerably regular, but his pulse was exceedingly feeble. By the advice of a physician the veins of his arm were opened, and a few ounces of blood abstracted with great difficulty. These circumstances were narrated by a student who attended him to the Hospital. At the time of his admission he was breathing with great stertor and at long intervals, and the pulse was nearly, if not entirely, imperceptible. Warmth, frictions, and general irritants to the skin, were applied, and stimulants were exhibited; of which, however, the patient was unable to swallow any considerable quantity; pulsation at the wrist became evident after some time, and continued so, for a short period, but again sank, and the patient died in a few hours.

During the present year a man fell from a ladder and received a severe contusion of the back. Some one who officiated as a physician, immediately abstracted blood to a considerable extent. The patient fainted three times, in quick succession, and the physician becoming alarmed, ordered brandy to be exhibited, to counteract the pernicious effects of the lancet. The patient was admitted into the Hospital in a state of intoxication. I am unable to declare whether the gentleman who first attended this case was, or was not a regular practitioner.

It would be easy to enlarge this list of cases to a considerable extent, but those already adduced are amply sufficient to elucidate the subject—it is therefore unnecessary to engross the time of the reader with further details. All who have *properly* attended the practice of our public Hospitals can estimate the importance of the subject.

If there be any circumstances under which it is proper to delay the application of the lancet for a longer period than usual, after reaction is completely established, it is in those cases where the patients have been addicted to the intemperate use of spirituous liquors. Delirium tremens is unfortunately a very frequent disease in our country; and, in the lower orders of society, its ravages among those who have suffered under the depressing effects of severe local injuries, are alarming in the extreme.

Every thing which tends to increase or to continue these depressing effects, must be pernicious in the last degree; and the lancet should be employed with the greatest circumspection whenever we have reason to dread the appearance of this disease. I do not pretend to assert, that traumatic inflammation in drunkards but seldom calls for the abstraction of blood. I contend only for delaying this remedy until the urgency of the symptoms compel us to employ it, and for the necessity of keeping constantly in view that we are steering between a local disease of considerable importance on the one hand, and a constitutional affection of the most serious grade upon the other. The greatest judgment and discrimination are necessary in the treatment of cases of this description; and sometimes (as in certain compound fractures) the question of blood-letting is scarcely less perplexing than that of amputation. I have witnessed fatal effects from neglect of these precautions in several instances, and serious difficulty in many.

In the commencement of this paper, I have said that the necessity of a stimulant plan of treatment in the extreme prostration of the system, consequent to severe accidents, was too evident in the generality of cases to require any comment. In injuries of the head, however, there may exist reasonable doubts of its propriety. The diagnosis is here by no means distinct—any one who has examined a number of cases, will be forcibly struck with the occasional inaccuracy of deductions drawn from any or all the symptoms, by which we attempt to distinguish between depression of the bone, rupture of a cerebral vessel, and simple concussion.

In the first of these accidents, no treatment can be attended with material benefit until the depressed portion is elevated: in the second, every attempt at reaction, every thing that tends, either directly or indirectly, to accelerate the circulation, must heighten the danger. In the case of simple concussion, the way would be much more open, could we pronounce with certainty that no *læsion* had taken place, and in some instances this may perhaps be done. There could be no impropriety in treating these instances upon general principles, provided we are careful to watch with the greatest attention the first appearance of reaction, and to guard against its consequences; but, unfortunately, this positive discrimination is, in the majority of cases, utterly impossible. As a general rule then, it would be extremely dangerous to administer stimulants to hasten the recovery of the system after injuries of the head: but it would be still more improper to bleed in anticipation of reaction.

With danger upon either hand, would it not be much more rational to leave the powers of the system to recover their natural vigour, by their own inherent energy, while we remain in readiness to check their undue violence?—Instances of the pernicious effects of the contrary plan are, but too frequently, met with.

I shall close the present paper with some remarks upon the treatment and post-mortem examination of a case of injured stomach, which came under my care while acting as House Surgeon to the Pennsylvania Hospital.

John Feigan was admitted into that establishment on the 10th of May, 1828, at 9 o'clock, A. M. He had been engaged in shoeing a horse; which threw him down, and trod upon his epigastrium.

The patient walked from the gate of the institution to the ward, with the assistance of two men; but his system was exceedingly depressed, skin cold, and pulse hardly perceptible. He stated, that about half an hour had elapsed between the time of the accident and that of his admittance.

He was placed at rest upon his back, and as he complained of a good deal of pain, I directed him to take sixty drops of laudanum. In about three hours, there was a slight attempt at reaction. Cups and a blister were then applied to the abdomen. At four o'clock, P. M. his pulse had sunk again to such a degree as to be scarcely perceptible. He had vomited about a gill of blood, and continued to vomit violently, but without discharging any considerable quantity of matter.—I directed

R.	Sp. terebinth, - - - - -	ʒj.
	Pulv. G. arab. - - - - -	℥ss.
	Sacch. alb. - - - - - -	ʒij.
	Aq. puræ. - - - - - -	℥vss.

℥ss quaque hora sumenda.

At six o'clock, P. M. pulse at the wrist imperceptible. Patient vomits occasionally. Ordered

R. Carbon. ammon. - - - - - ʒij.
Aquæ puræ. - - - - - - - ℥vss. *m*
℥ss quaque hora sumenda.

Placed a sinapism over the epigastrium, (the blister having acted very slightly,) and ordered the extremities rubbed with the decoct. canthar. in sp. tereb.

May 11th, at 10 o'clock, A. M. pulse imperceptible, extremities cold, skin livid, and the patient has some mental aberration; at 3 o'clock, P. M. he died.

Examination Post-Mortem.

Peritoneum.—The whole surface of the peritoneum was lined with a thick coat of fibrine; the cavity of the abdomen contained about three quarts of pale yellowish serum, filled with yellow flakes of lymph, and faintly tinged with blood.

Intestines.—The intestines were universally and deeply reddened, and were completely agglutinated by a general exudation of coagulable lymph. The proper coats of these viscera exhibited nothing peculiar, the inflammation being confined to the peritoneal covering.

Liver, Spleen, and Kidneys.—These organs were free from apparent injury, and wore a healthy aspect. The bladder, however, contained no urine, although none had been discharged from the time of the accident. It was firmly contracted.

Stomach.—The cellular coat of this viscus was every where filled with injected vessels, in great number, and of large size. The mucous coat of the cardiac extremity was pale, except in a few spots where the blood appeared to have subsided after death; but at the pyloric extremity it was considerably reddened, exhibiting unequivocal marks of inflammation. I could not discover the slightest abrasion, either in the stomach or duodenum, which last viscus was in a healthy condition.

Remarks.—It will be noticed in this case that the reaction, if indeed it deserves that name, continued but about four hours; in nine hours, the pulse at the wrist became imperceptible, and at the expiration of thirty hours, the patient expired.

It is impossible to believe that the violent effects of inflammation, which were displayed upon opening the abdomen, resulted during the four hours of increased action. We are compelled then to admit, that while the system is labouring under the immediate effects of a mortal blow, while the skin is livid, the extremities cold, and the pulse at the wrist nearly, if not entirely, absent, while in fact every thing announces the rapid approach of dissolution from a direct prostration of vital power, the stomach and peritoneum are capable of taking on the most violent inflammation; that adhesions to an immense extent may be formed, and quantities of coagulable lymph poured out into the cavity of the abdomen.

When a patient is admitted into the Pennsylvania Hospital, immediately after receiving a severe contusion in any other part than the head or spine, and when there is danger of a fatal termination from direct debility, it has long been customary to expedite reaction, if possible, by the exhibition of volatile alkali and other stimulants; and in most instances this practice has been attended with the happiest effects; but I think few will assert, after reading the foregoing case, that the same treatment is universally applicable. Again—it is well known, that in inflammations of the stomach the pulse is but a feeble guide to the practitioner, that venesection is not only proper, but absolutely necessary in many instances where the arterial action is exceedingly diminished: but no experienced surgeon, we are convinced, would dare to recommend the employment of the lancet in such a case as that which we have just narrated.

It is more than probable that the mischief resulting from so severe an injury, placed our patient far beyond the aid of medicine; but cases will no doubt occur, in which judicious treatment might establish a reaction, and thus preserve the life of the patient. Local irritants, by creating a counter-stimulation, at once suggest themselves; but we should select such as act with a degree of promptitude, proportioned to the emergency of the case. The application of a towel dipped into boiling water, has been resorted to with great advantage by practitioners in the East Indies, in various severe visceral inflammations;* and the employment of says, perish with this disease. In Salem, in the state of Massachusetts, which is situated near the sea, and exposed during many months in the year to a moist, east wind, there died in the year 1799, one hundred and sixty persons; fifty-three died of consumption, making nearly one-third of the whole number. Eight more died of lung-fever, probably what was called in Philadelphia the galloping species of that disease. Consumptions are more frequent in Boston, Rhode Island, and New York, from their vicinity to the sea-shore, than they are in Philadelphia. In the neighbourhood of Cape May, which lies near the sea-shore of New Jersey, there are three religious societies, among whom, the influenza prevailed in 1790. Its mortality, under equal circumstances, was in the exact ratio to their vicinity to the sea. The deaths were most numerous in that society which was nearest to it, and least so, in that which was most remote from it. These unfriendly effects of the air in the above pulmonary diseases, do not appear to be produced simply by its moisture. Consumptions are scarcely known in the moist atmosphere which so generally prevails in Lincolnshire in England, and in the inland parts of Holland and Ireland."

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* In Calcutta they are in the habit of employing little baths of tin, adapted to the form of different parts of the body, for the application of local heat. They possess great advantages over bricks, bottles, and the other means generally resorted to for similar purposes, as

Professor FODERE, a learned physician residing in Nice, in speaking of consumption, observes, "it would appear, that there must be on the shores of the Mediterranean some other source of evil, besides mere variability of climate; and I am disposed to look for this in the impregnation of its atmosphere with some of the muriatic salts of the ocean."

Sir ALEXANDER CRICHTON, late physician to the emperor of Russia, states that "the sea-coast, whatever may be its locality, is highly injurious to phthisical patients, provided there be any breach of continuity in the pulmonary apparatus."

It is admitted that sea-air, when breathed alone, is favourable to pulmonary consumption, and generally allays, or suspends the cough; and it is a remarkable fact, well known to sea-faring men, that old sailors, labouring under a chronic cough, can always anticipate the approach of land by their cough, which becomes aggravated as soon as they breathe this mixture of land and sea-air.

Mr. POINSETT, our distinguished minister in Mexico, who laboured under a chronic cough, observed that his cough, during a sea voyage, was always suspended, and invariably became aggravated as soon as he reached soundings.

Dr. RUSH states that he "crossed the Atlantic ocean in the year 1766, with a sea captain who announced to his passengers the agreeable news, that they were near the British coast, before any discovery had been made of their situation by sounding, or by a change in the colour of the water. Upon asking him upon what he founded his opinion, he said, he had been sneezing, which he added was the sign of an approaching cold, and that in the course of upwards of twenty years he had never made the land without being affected in a similar manner."

These are important facts, and deserve the most serious and deliberate consideration. They plainly show, that there is something in the atmosphere of the neighbourhood of the sea-shore, deleterious to the lungs besides moisture, and sudden changes of temperature. Dr. PARR, in noticing Dr. RUSH's suggestion of the disadvantages that may arise from a mixture of land and sea-air, observes, "until these have been found to differ, we may neglect the distinction as an unnecessary refinement." This is certainly a very unphilosophical conclusion, and is unworthy the high reputation of Dr. PARR. The particular states of the atmosphere which cause diseases in different seasons, are totally unknown to the medical profession, and the subject is "wrapt in inexplicable mystery;" sometimes one disease is excited, sometimes another; and would Dr. PARR, or any other person pretend to deny that that these various diseases were produced by some peculiar state of the atmosphere, because they were unable to trace those different changes? This objection then, in the present state of our knowledge, cannot affect the doctrine which we are endeavouring to establish. We will, therefore, discard it, and proceed to give an account of the mortality from consumption in different parts of the country.

In Boston, during the last five years, it is calculated that the mortality from consumption is about one-sixth of all the inhabitants that have died.—In New York, about one-fifth.—In Philadelphia, one-seventh.—In Baltimore, one-seventh.—In Washington, one-eighth.—In Charleston, S. C. one-sixth.

Sullivan's Island is very unfavourable to consumptive invalids. Dr. RICHARD RANDALL, late a surgeon in the U. S. army, and now a resident in this place, who was stationed at different military posts throughout the southern country, states, that to those predisposed to phthisis, the air of Sullivan's Island is highly deleterious in comparison with that of Charleston:—that acute pneumonic inflammation is also more prevalent in the former, than in the latter place:—that the air of the city of Charleston, though otherwise more pure than that of the interior of lower Carolina, is not so well adapted to those predisposed to phthisis:—that the inhabitants of Augusta, Savannah, and New Orleans, though possessing fewer advantages of climate, are less obnoxious to pulmonary affections, than those residing in the otherwise comparatively healthy situations on the sea-board. "Soon after my arrival," says he, "at Sullivan's Island, in 1821, as surgeon to that military post, I thought I discovered a stronger predisposition among the soldiers to pulmonary affections of all kinds, than I had observed at my former stations in the south, and my experience during the succeeding winters confirmed this belief; for the proportion of cases of pneumonia, and of deaths from phthisis, were three-fold greater at this post than at my former stations in the interior of Georgia and Alabama."

The bay of St. Louis, and Passa Christiana are also very unfavourable to pulmonary complaints. Colonel George Gibson, of the U. S. army, who was stationed at the latter place during three summers, informed me that Passa Christiana was a great resort for invalids from every description of disease; and it was a remarkable fact, that the consumptive cases survived but a short time after their arrival there; whereas invalids of every other description recovered most rapidly. This fact is totally subversive of the common opinion relative to the cause of pulmonary affections in the neighbourhood of the sea. Passa Christiana is liable to no variety of temperature—its atmosphere is warmed by the Gulph Stream, and is exempt by distance and the intervening forest, from the cold air of the mountains.

It is evident as we recede from the sea-shore, that the cases of pulmonary consumption become diminished. This disease is scarcely known among the Indians of our forest; and in many parts of the interior of the country, consumption is extremely rare; particularly on the borders of Ohio, Mississippi, and Missouri, where bilious intermittent fevers mostly prevail. Colonel

BENTON of the U. S. Senate, from Missouri, informed me that the climate of that state was peculiarly favourable to consumptive invalids; and this fact is so notorious, that many persons afflicted with this complaint, have removed their residence to it, in order to prolong their lives. It is not unusual in that climate for consumptive invalids to linger a long time, sometimes ten or fifteen years, whereas near the sea-shore it generally destroys life in a few months.

Pulmonary consumption is very destructive in Great Britain, and the annual victims to its ravages are calculated at fifty-five thousand. Dr. GOOD states, that in Great Britain, this disease carries off usually about one-fourth of its inhabitants—at Paris about one-fifth, and at Vienna about one-sixth, while it is by no means common in Russia. "It is a singular fact," says he, "and not well accounted for, that of all places which have hitherto been compared, the proportional mortality from consumption appears to have been the greatest at Bristol; and this not among its occasional visiters, but its permanent inhabitants; and yet, as though in defiance of experience, this very place has been chosen as the great resort of consumptive persons."

The south of France, which has been a fashionable resort for consumptive patients for the last sixty years, and was first brought into notice by Dr. SMOLLET, is perhaps of all others, the most fatal climate to this unfortunate class of invalids. No American, within our recollection, afflicted with this complaint, has ever visited the south of France, who did not fall a sacrifice to its climate. Dr. JAMES CLARK of England, influenced by a spirit of inquiry, which does honour to his heart and his profession, visited the south of France, and Italy, bordering on the Mediterranean. From information obtained on the spot, as well from observation as from conversations with the most intelligent and experienced medical gentlemen, he has published a most valuable treatise on the climate of those places, containing more important information than any other work which has ever been written on the same subject; and in which he concludes, that the climate of those places is most fatal to all invalids labouring under pulmonary affections.

Professor FODERE observes, "I have always been astonished that our older physicians should have sent their consumptive patients to our sea-shores, since it is irrefragably proved, by the experience of our time, that the climate of the shores of the Mediterranean is hurtful to such invalids. At Marseilles, Nice, and Villa Franca, consumption is not, as in Switzerland, on the banks of the Soane, and in Alsace, a chronic disease; on the contrary, I have very often seen it terminate in forty days." Again, he observes, "upon the whole, I consider it as contrary to experience to send patients afflicted with tubercular phthisis to the sea-shore, and yet it is singular that the practice should continue to be persisted in."

Dr. Samuel Sinclair, surgeon in the British navy, after several years service in the Mediterranean, and especially in the fleet employed off the shores of the south of France, says, "I am the more desirous of making known my own experience in this matter, as I am well convinced that the prevalent opinions respecting it, are most erroneous. So far from coinciding with these opinions, I must declare that I am borne out by the united experience of all my medical friends, who have served in that country, in asserting that the climate of the Mediterranean, more especially at certain seasons of the year, is particularly hostile to phthisical patients, and productive of pulmonary complaints."

Sir A. Crichton regrets that patients are still sent to Nice, Naples, and Madeira, all which places are destructive to these unfortunate people. "It is a singular circumstance," says Dr. Clark, "that while the English practitioners were sending their consumptive patients to the shores of the Mediterranean, our naval medical officers, navigating that sea, were sending theirs to England."

Dr. James Johnson, in his valuable treatise on the diseases of tropical climates shows, by comparing pulmonic and other diseases, received into the Hospitals of Minorca, Malta, and Gibraltar, from the Mediterranean fleet, during the years 1810, 11, and 12, that the ratio of pulmonic to other complaints, was one to two and a half. "Out of 455 cases of phthisis alone, 151 died before the remainder could be shipped off for England, where in all probability most of them perished: whereas, out of 1242 cases of fever, only 58 died, and a very small number were invalided. This authentic document will speak volumes on the climate of the Mediterranean."

It is well known to the American officers who have cruised in the Mediterranean sea, that all sailors predisposed to pulmonary consumption, who have visited that sea, have fallen victims to this complaint; and many others, whose constitutions had never before exhibited any signs of pulmonic affections, have been seriously predisposed to the disease by remaining in that climate.

After taking this review of the effects of different climates in pulmonary diseases, we are irresistibly led to conclude, that the United States afford advantages more favourable in this complaint than any other country yet known. Here the consumptive invalid has the advantage of every variety of soil and climate—every facility in travelling—mineral waters that are valuable in diseases of the lungs; and above all, the heart-felt satisfaction of enjoying the sympathy, kindness, and hospitality of his countrymen. Let us therefore abandon this blind and cruel fashion of sending our consumptive patients to the south of France, Italy, and other foreign countries, where it has been incontestibly proven that the climate is a sure passport to the grave.

Pulmonary consumption, unlike most other diseases, makes its approach in the most deceitful and insidious manner. It carries with it a fascinating charm that lulls suspicion, and wraps its victims in the most fatal delusion. It therefore becomes the duty of the physician to act with candour, honesty, and decision: his conduct should admit of no compromise. He should feel compelled by the most sacred obligation, to communicate to the patient, or his friends, the earliest information of the approach of this terrible disease; and to urge in the strongest terms, the importance of a uniform mild temperature, exercise, and a change of air. By such prompt and judicious instructions many thousand lives might probably be saved, which are sacrificed by the tame and palliating conduct of the profession.

The consumptive invalid should always remove as far from the sea as possible, and take as much exercise as is consistent with his strength, particularly *on horse-back:* his diet should be such as is most easily digested—mild and nutricious. High hills or mountains should be carefully avoided; the air of such places is too pure; there, the oxygen gas is too stimulating, and is apt to increase the inflammatory action, to suppress the usual expectoration, and sometimes to produce hæmoptysis. Low grounds, on the contrary, appear always favourable to consumptive patients; there, the air is of a lower quality, and therefore not so stimulating to the lungs. From experiments which have been made in breathing the hydrocarbonate, and from observation, we are induced to believe, that marshy countries, distant from the sea, where bilious intermittent fevers prevail, are also favourable to consumptive invalids. Places, where animal putrefaction takes place, are generally favourable to weak lungs. There the hydrogen gas which is intermixed with common air, destroys the irritability of the living fibre, subdues inflammatory action, and improves the secretions. Thus it has been related, that a confirmed consumption has been cured by a residence in a coal mine; and that butchers, cat-gut makers, tanners, soap-makers, &c. surrounded by a vapour impregnated with hydrogen, are never liable to pulmonary consumption; and it may be from this cause, that consumptive patients derive benefit from a residence in cow-houses.

The *Red Sulphur Springs* in Virginia have acquired of late, great reputation in pulmonary affections; and from the high and important testimony in favour of these waters, we do not hesitate to recommend them, most earnestly, to the consumptive invalid.

The Red Sulphur Springs are situated in a narrow deep valley, between two mountains running from N. E. to S. W. near Indian creek, a branch of New River, distant about eighteen miles S. W. of Monroe court house.

Doctor George W. Crump, a member of Congress from Virginia, states that he laboured several years under a pulmonary affection, accompanied with hectic fever, profuse perspiration, prostration of muscular strength, great emaciation, and much derangement of the whole alimentary canal: "In this state," says he, "I resorted to the waters of the Red Sulphur Spring, and combined with their use a shock-bath every morning—my diet consisted almost entirely of rye-mush, milk and honey. In the course of a few days, the circulation became more equally distributed, the colliquative sweat was checked, the expectoration became more laudable, and the whole organic economy invigorated. By a persevering use of this plan, for two seasons, I have been entirely relieved from every pulmonic symptom." "The water is extremely cold (for spring water) and is remarkably transparent and light: it acts principally on the skin and kidneys, and not unfrequently, some aperient medicine is required to prevent constipation of the bowels. In every instance, says Dr. C., which has fallen under my observation, and they were very numerous, it produced a rapid reduction of the pulse."

Doctor HUGER, of Charleston, S. C., was afflicted some years ago with pulmonary disease, and all his friends thought his disease hopeless; in this situation he was advised to visit the Red Sulphur Springs, in Virginia, and from the use of those waters during one season, he was perfectly restored to health. The Doctor states, that he was enabled by the aid of those waters to regulate his pulse, almost as he pleased. He is now living in South Carolina, and is one of the healthiest men in that state.

In a letter, dated at the Springs, to a friend, from F. W. GILMER, Esq. Professor of law in the University of Virginia, who was labouring under pulmonary affection, he states, "these waters are as far superior to all others, as those of Ballyspelling were to all others in Ireland. In three hours they allayed my cough so as to take away all that was unpleasant in it. They diffuse a sense of coolness, freshness, and newer life over the whole system. They abate the pulse most rapidly, remove fever, moisten, lubricate, and soften whatever is hard and dry—make one sleep as though he had taken an anodyne—are the safest of all waters, and indeed have no ill quality."

After remaining at the Red Sulphur Springs during the summer, the best winter residence for the consumptive invalid would be in the interior of South Carolina, Georgia, or Alabama. There the soil and climate are peculiarly favourable to such persons during the winter and spring seasons; and the atmosphere, impregnated with the effluvia of the *pine forest*, is highly grateful and advantageous in all pulmonary affections.

In choosing the location for a residence, great caution should be observed in selecting such as is well protected from the north and east winds, and exposed as much as possible, to the warm and cheering influence of the sun.

It affords us much pleasure to inform our readers, that Professor JAMES proposes to furnish some comments on the following interesting communication: but his multiplied engagements, at this season of the year, have prevented their preparation for the present number. The novelty of the case, however, induces us to give it immediate publicity.

ARTICLE V.—*Case of Extra-Uterine Pregnancy*, communicated by Drs. YARDLEY and SANSBURY, to Professor JAMES, of the University of Pennsylvania.

Philadelphia, Jan. 30*th*, 1826.

SIR,—IN compliance with your polite request for us to transmit to our Alma-mater, every thing interesting or important that should occur to us in practice, I shall furnish you with the following particulars of a case which at least possesses some degree of novelty.

On the 12th of December 1825, I was called, in company with my friend Dr. SANSBURY, to see Mrs. G., a delicate female, aged 23 years. Her husband, the messenger who came for me, stated that there was "something coming from his wife, which exactly resembled the hind legs of a large frog." On examination we found the legs and nates of a well formed fœtus, apparently about five months old, projecting from the anus of the mother. By introducing the finger into the vagina, the uterus was found low down in the pelvis and somewhat larger than usual. The os-uteri open, thickened and tender to the touch. The recto-vaginal septum was perfect. We directed the patient to bear down, while moderate extension was made with the nates of the fœtus; it was, however, found impossible to bring it away by these means, for the most excruciating pain was produced by the slightest degree of extractive force. A dose of ol. ricini was next administered, and we left the patient for two hours. On our return, we found that the oil had produced the desired effect, and that the fœtus was expelled with the first dejection. It proved to be a male child, perfect in all its parts with the exception of its back, which was slightly injured by ulceration. Four inches of umbilical cord came away with it.*

I have been able to collect the following facts relative to the previous history of the case. Mrs. G. has been delivered of two living children, and miscarried in the third month of her second impregnation, owing to an injury which she received while carrying some wood. When her youngest child was about a year old, and while she continued to suckle it, her catamenia appeared and returned regularly till last May. She did not wean her child, until several weeks after the obstruction of the menses and the morning sickness induced her to suppose herself again pregnant During the first four months after the appearance of the signs of utero gestation, her sensations were similar in every respect to those she had felt in her former pregnancies, and the enlargement of her abdomen was perfectly regular. A short time after the expiration of the fourth month, she fell down stairs and hurt herself considerably, especially across the loins. She suffered constant pain and uneasiness in her back and through the lower part of her abdomen, for about forty-eight hours after the fall; she then felt a very painful and singular sensation in her abdomen, which she says "felt like a child turning heels over head in her belly." The pain was so violent as to induce syncope, which continued for some time, and on reviving, she had very severe and regular labour pains, attended by a profuse discharge of blood and water from the vagina. By examining the parietes of her abdomen with the hand, two lumps were very distinctly felt, one on each side, and these appeared to be connected by a thick cord. A physician was immediately sent for, who resorted to remedies to prevent abortion. These relieved the uterine pains, though they did not entirely subdue them; and diminished, though they did not entirely check the discharge. After about a week of severe suffering, she left her bed, and the physician discontinued his visits. She was still, however, in a very uncomfortable condition, having a constant pain in the uterine region, attended with frequent bearing down efforts, and accompanied by a discharge from the vagina, resembling the lochia. The two lumps in her abdomen were still perceptible when she was in a recumbent posture; they had, however, diminished in size, and were very sore to the touch. When she turned in bed, she could distinctly feel something falling from one side to the other. Dr. SANSBURY saw her for the first time in the early part of October, and the following is his account of the case from that period.

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* The preparation has been deposited in the Wistar Museum.

"I found Mrs. G. complaining of great pain and tenderness in the hypogastrium, evidently proceeding from the womb, which, owing to the thinness of the integuments, could be easily grasped by the hand, and had the feel of a well contracted uterus immediately after delivery. She also complained of lancinating pains, shooting through the abdomen and down the thighs. She had great pain and difficulty in urinating, together with a sense of weight in the vagina, from which there was a considerable discharge, tinged with blood. Upon examination per vaginam, I discovered the os-uteri to be hard, irregular and knotty; considerable pain was produced by pressure, and the whole uterus appeared to be hard and unyielding. After a deliberate view of the case, I concluded that perhaps she might be mistaken in regard to her pregnancy, and that the case was a scirrhus uteri. Under this impression I put her upon the use of cicuta. She took this remedy for about four weeks with advantage; as, from the examinations which I occasionally made, I found the diseased state of the uterus much improved. She was now able to attend to her domestic concerns, and I became less regular in my visits. About the 20th of November, she had frequent and profuse discharges, from the bowels, of purulent matter, mixed with blood. A dose of oil was administered, which operated freely, and in two or three days, the evacuations from her bowels became perfectly natural, and continued so until the expulsion of the fœtus. A few days before the appearance of this purulent discharge from the bowels, an organized mass was expelled from the vagina, which her mother showed to a physician, who pronounced it to be part of a placenta. Nothing more, worthy of remark, occurred till the 11th of December, when she discovered something unnatural passing from her bowels. I was immediately sent for, and on examination found a substance which had the appearance of a child's foot, projecting about half an inch from the anus; but before I could satisfy myself, it was returned into the rectum by a change in the position of the mother. I immediately introduced my finger, but could discover nothing except a little hardened fœces. I now directed a dose of ol. ricini, which operated, and the next morning brought down the legs and pelvis of a fœtus. In this state of things I requested that my friend Dr. Yardley should be sent for, to witness the case."

The fœtus measures eight inches from the heel to the vertex. During its expulsion, the woman complained of excruciating pain, which was much increased by the sharp edges of the bones of the head, which cut through the integuments and wounded the parts through which they passed. The patient complained of great soreness in the rectum for some time after the fœtus was expelled; but her recovery was as rapid as could be expected after such severe suffering, and she now enjoys as good health as has been usual with her. Any further information respecting the case will be cheerfully communicated by your obliged and obedient friend,

THOMAS H. YARDLEY.

To Thomas C. James, M. D.
Professor of Midwifery, &c. &c. in the University of Pennsylvania.

Article VI.—*On the employment of Leeches in Erysipelas.* By Henry Neill, M. D., Physician to the Lying-in department of the Philadelphia Alms-House Infirmary.

Erysipelas has occasionally been, in my practice, a fatal disease, and generally one over which I thought I had been able to exert a very slight curative influence; appearing rather to run on until it had expended itself, than to be arrested by remedies. But as I have latterly been led to adopt a practice which I think has been more successful, and which not only differs from that heretofore pursued, but is in direct opposition to a generally received opinion, I have thought it my duty to lay the result of my experience before the medical public.

With this view, it is my design to report briefly and faithfully the treatment and result of a few cases, which have been subjected to this remedy.

Case 1st.—In September, 1815, I was called in the evening to visit a young man, about 25 years of age, in Spruce Street, who informed me, that the evening before, he missed his step in crossing the gutter, and had severely sprained his ankle. He was, at the time, suffering very much from pain. On examination, I found the ankle very red and swollen, accompanied with great heat, he also had a high fever. I directed 16 ounces of blood to be taken from the arm, and 40 leeches to be applied to the ankle; afterwards, a cold poultice, made by wetting crumbs of bread in lead-water.

It was by candle light I made my first visit, and it had not, at that time, the appearance of erysipelatous inflammation; otherwise, I should not probably have directed the application of leeches, being well acquainted with the universal condemnation which that practice had received from the English physicians, and as far as my knowledge extended, also from the American.

At my next visit in the morning, he informed me that he had experienced very great relief from the remedies which had been used, and had slept the latter part of the night very comfortably. On removing the dressing, I was astonished and somewhat alarmed to find the inflamed part covered with vesicles; some containing a limpid, and others a bloody fluid; the character of erysipelatous inflammation being most distinctly marked. The redness and swelling, however, were much reduced, and the pain was very inconsiderable. I directed a saline purge this second day of my attendance, and continued the cold saturnine poultice.

On the next (third) day, I found all inflammation of the skin had disappeared; a plaster of simple cerate was applied, rest enjoined, and in less than one week my attendance terminated. A slight stiffness of the ankle remained, which soon went off. The bites from the leeches which had been applied to the inflamed surface, were not followed by the slightest inconvenience or bad consequence.

Case 2nd.—On the 20th of June, 1822, I was called to see Mrs. ———, in Almond Street. She was a lady about 50 years of age, of full habit, and rather luxurious in her living, being in easy circumstances. She informed me, that she had been costive for several days, had taken medicine, but had failed to procure an evacuation; and from frequent attempts to evacuate the bowels, by straining, the piles, as she supposed, had come on. She was in great pain, and had some fever. I directed 12 ounces of blood to be taken from the arm, the additional exhibition of cathartic medicine, and the application of lead-water to the part affected.

21st. No evacuation had been procured; cathartic medicine continued.

22nd. The bowels had been freely evacuated, but no relief afforded to the pain;—she was still feverish. On examination, I found there were no piles, but considerable erysipelatous inflammation around the anus, and extending on the nates. I directed 50 leeches to be applied to the part, and the lead-water to be continued. The diet consisting of water gruel.

23d. She was quite relieved from pain, and felt very comfortable, but was unable to pass her urine. On examination to day, a small black speck appeared on each of the nates, which increased by the next day to the size of a dollar. I drew off her urine; and, at the suggestion of Dr. T. T. Hewson, who was called in consultation to day, a poultice was applied, consisting of mush, made with a solution of opium instead of simple water.

24th. The gangrene had not increased, the pulse was natural, and she was free from fever. Her diet was improved to light broth, and the poultice continued.

From this time to the 7th of July, I had occasion to draw off the urine twice daily; after which it passed naturally. She was kept on a mild nutritious diet; the poultice was continued for a few days, the slough then separated from the sound part, leaving a healthy suppurating surface. Simple cerate was then applied; granulation and cicatrization soon followed, and in about four weeks from the time of my first visit, she was perfectly restored to health.

This may be considered by some as a case which forbids the use of leeches to the inflamed surface in erysipelas. But when it is recollected to what an extent mortification in this part from this disease, generally runs, and that life is so frequently lost, or greatly endangered, I think it will not be unreasonable to conclude, that inflammation was arrested much sooner than it would have been without this remedy; that the gangrene was not so extensive as it would have been, had the inflammation continued longer, and that her life would have been proportionably more in danger had not these means been employed.

Case 3d.—On the 13th of June, 1824, I was called to see Mr. ———, of Virginia, in Chesnut Street; who was on a visit to the city. He was about thirty-five years of age, in delicate health, having an affection of the liver of two or three years standing. He had undergone two courses of mercury, at periods of a few months interval; the soreness of his mouth from the last, had just left him when he arrived here. When I first saw him, he complained principally of pain in the heel, which, he supposed, was caused by walking on the pavement, to which he was unaccustomed. He had been confined to the house for two or three days, had been bled, and taken a dose of salts. On inspecting the part, I found erysipelas distinctly marked, extending up the leg. He suffered great pain, and had great sickness of stomach, a hot skin, and continual thirst; the pulse was such as, I thought, forbid the further detraction of blood. I directed the neutral mixture, and the application of lead-water to the part affected, and enjoined a strictly antiphlogistic regimen.

14th. There was no improvement: the inflammation had extended higher up the leg, and the febrile symptoms continued.

He took purgative medicine to-day, and made some changes in the external applications. Rye meal was tried, and, afterwards, a poultice of bread and milk, the surface being wet with laudanum. But at his request, they were all laid aside, and the use of lead-water resumed.

15th. The inflammation still advancing, had got above the knee. I directed fifty leeches to be applied to the upper part of the inflamed surface about the knee. The leecher took the liberty of applying one hundred. I saw my patient shortly after the operation, and found him much exhausted from the loss of blood:—directed a little wine and water, which soon revived him. I had the satisfaction, however, to find the leg was quite pale, the pain had subsided, and I flattered myself, the disease had been conquered. The application of the lead-water was continued.

16th. The limb appeared rather more red and warm. Continued the lead-water, and directed a mercurial purge.

17th. The inflammation had returned, and was advancing up the thigh. Requested a consultation, and Dr. Hewson was called.

His situation was considered extremely critical. After the history of the case was heard, it was agreed that thirty leeches should be again applied to the upper part of the inflamed surface, and a little beyond. It was accordingly done immediately. After the second leeching, the inflammation again disappeared, and the pain subsided. 18th. He was free from all distress, but complained much of debility. A little animal broth was now directed.

The inflammation did not return. Mild tonics were then used; he continued to convalesce; and on the 25th my attendance terminated. About the 30th, he left this city for Virginia; he has since been here, and I learn that he has not had any return of the disease.

EDITORIAL REMARKS.—The treatment of erysipelas by local abstraction of blood, though not of recent origin, is so advantageous, but at the same time so much neglected by the majority of even our best physicians, that we publish, with the liveliest pleasure, the foregoing cases, furnished us by one of the most experienced and judicious practitioners of this city.

The cause of this neglect is not difficult to discover. Until within a few years, the medical publications from the continent of Europe, had but a very limited circulation in this country; and physicians, even in our large and commercial cities, confined their reading to such works as were furnished them by their English brethren. It is not astonishing, therefore, that they should, almost universally, have neglected resorting to leeches in erysipelas; since we find that, with the exception of Dr. WILSON PHILLIP and a few others, the English writers either do not allude to them at all, or speak of them as of very secondary importance;—condemn them altogether, as liable to exasperate the disease;[*] or, like Dr. JAMES, avow, that although they have used them with benefit, they have never resorted to them without apprehension, and will not venture to recommend the practice.[†]

When we cross the channel, however, and examine in what light the same practice is viewed in France, we find that in no part of the world, perhaps, are leeches more extensively used in erysipelas than there; and that no where, have more positive rules, resulting from a wide experience, been given, for their employment in that disease. On this subject, as on many more, the profession are much indebted to M. BROUSSAIS, as we do not find that PINEL,[‡] RENAULDIN,[§] and other French writers before him, make mention of leeches in this affection. As we regard the practice as highly advantageous, we have ventured to offer, in this place, a summary account of the practice of Broussais and his disciples, in erysipelas.

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[*] B. Bell, Dr. Good, &c.

[†] On Inflammation, p. 252.

[‡] Nosographie Philosophique.

[§] Dictionnaire univ. des sciences med.

In entering on the subject, however, we cannot withhold our opinion, that no slight mischief has accrued, in the treatment of erysipelas, from the wrong views which have long prevailed among us, in respect to its nature. Regarding the inflammation which constitutes this disease, as *sui generis*, or in other words, as one of a *specific kind*, the consequence has been, that too much stress has been laid on the discovery of specific remedies; and the medical world has, for a time, been annoyed with the speculation of writers on the benefit or danger, in its treatment, of not a few articles of the materia medica. We do not intend, on this occasion, to waste our time and limits in showing the fallacy of an opinion, which the progress of pathology, gradually, tends to overthrow; but will merely remark here, that if physicians will consent to view this disease as a common inflammation of the skin, to be treated on the broad principles on which all inflammations are treated, and requiring the common remedies applicable to all inflammations, bearing in mind, at the same time, the connexion, as cause or effect, existing between it and gastric, hepatic, and cerebral irritation, as well as the liability it has, with all superficial and wide extended inflammations, to recede and attack other parts, their practice will become less complicated in erysipelas, as well as safer and less harassing to the patient.

It is precisely in this light, that the school of Broussais views erysipelas; and on these principles they treat it. In mild cases of the idiopathic form of the disease, produced by external causes, unconnected with internal irritation, and in which the skin is the only part affected, Broussais* resorts to simple local astringent applications, as the sugar of lead, decoction of bark, vinegar and water; taking care, at the same time, not to arrest the progress of the inflammation too suddenly, for fear of a metastasis to a more important organ. If the disease be more violent, however, and accompanied, as it usually is, with visceral irritation, emollients must be substituted for the astringent applications; because the repercussion of the cutaneous inflammation might aggravate the internal disease, which, if violent, must attract the greatest attention. In all these cases, antiphlogistics are the only proper remedies, and among these, leeches will be found of the greatest utility. As in other diseases, their number must be proportioned to the violence of the attack, as well as to the age and strength of the patient.

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* Leçons du Docteur Broussais, p. 254.

When the disease, being symptomatic, has appeared some days after the visceral irritation, and this latter is relieved by it, the cutaneous disease must be respected, whilst the principal care of the physician should be directed to the original and more essential complaint. If, however, the erysipelas acquires great intensity, it should be treated, but cautiously, by the means already enumerated; for the simple reason that the violence of the irritation may serve to aggravate, by sympathy, the internal disease. In that species of erysipelas, which, from the inflammation having penetrated to the cellular membrane, is termed phlegmonous, and threatens to terminate in suppuration, gangrene and sloughing of the affected part, the application of leeches is found to be particularly serviceable.

But although the French physicians resort, in the majority of cases, to this method of drawing blood, they do not neglect bleeding from the arm or foot, when the erysipelas is violent and attended with high arterial action, and seated near vital organs; but more especially when complicated with inflammation of internal organs, as of the brain, lungs, &c. &c. Nor do they pay less attention to the part on which the leeches should be applied. Taught by experience that the bite of the animal, on many occasions, produces, itself, an erysipelatous irritation of the skin on which they are placed, and especially when used on the diseased surface, thus aggravating the disease they are intended to remedy, BROUSSAIS* almost invariably applies them about two or three inches from the inflamed surface, and in this way derives considerable benefit from the bleeding, without incurring the risk of increasing the original complaint. When the erysipelas, however, spreads extensively, and penetrates deeply, the inconvenience to which we have alluded, should be held as slight, compared to the gangrene and sloughing which threaten the part, and the leeches in consequence must be applied directly over the inflamed membrane But when thus used, these animals must be scattered over the surface, so as not to attract too great an afflux of blood to one spot.* To this BROUSSAIS adds, that the fear of a metastasis should not deter us from using leeches, as it never occurs, when care is taken not to apply any irritant to the digestive organs.†

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* Leçons du Docteur Broussais, p. 248, &c. Annales de la médicine, Phys. 3, p. 352.

On several occasions, we have ourselves resorted to leeches in this disease, and have, by observing the rules laid down by BROUSSAIS, derived the desired effect. In closing this cursory notice, we shall briefly remark, that guided by the principles we have pointed out, the French physicians have generally succeeded in curing the disease, even in its worst forms, in a very short space of time. They seldom, and we might perhaps be safe in saying, never resort to bark; from which the good sense of our physicians have led them to abstain, notwithstanding the praises that have been bestowed upon it by BROMFIELD, HUNTER, Sir GILBERT BLANE, and other English writers. We must add, however, that carrying their fears of emetics and purgatives to, what many would pronounce, an unjustifiable extreme, they seldom torment the stomach and bowels of their patients with these drugs, unless all signs of irritation in these organs have subsided. L.

ARTICLE VII.—*Observations and Experiments on the Action of the Heart.* By JOHN WILTBANK, M. D.

IN my inaugural dissertation, published in the Philadelphia Journal of the Medical and Physical Sciences, for February, 1825, were detailed several experiments, performed on *cold-blooded* animals, to ascertain the source of the heart's action. So positive and decided did their results appear, that it was, at that time, deemed unnecessary to repeat or extend them. To afford the reader an idea of their nature, I shall briefly recapitulate the deductions then made.

From these experiments, it was evident, that the action of the heart of these animals, must be perfectly independent of the whole source of the nervous power; as it was in no way influenced by the destruction or removal of the brain and medulla spinalis. After the destruction of these organs, the heart would, in many instances, continue to pulsate precisely as before the experiment, and even the circulation of the blood was perfectly maintained. In another experiment, we removed the heart with its principal vessels from the thorax; and to ascertain whether its power of propulsion was retained, water was poured into the vena cava, which passed into, and rendered turgid, the auricle. The auricle contracting, the water was driven into the ventricle, whence it was propelled with considerable velocity, through the elevated orifice of the aorta. Still apprehensive of being deceived, the medulla spinalis and brain were completely destroyed, in another experiment, with a red-hot wire; after which, the blood was observed to flow freely, per saltum, from the main artery of one of the posterior limbs, at every contraction of the ventricle.

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* Annales de la méd. Phys. t. 6, p. 246. † Ib. t. 3, p. 352.

These experiments seemed perfectly satisfactory and conclusive. But it has since been objected, and with apparent plausibility, that the warm and cold-blooded animals are altogether distinct; and that it would be impossible, from experiments on the one class, to judge of their results upon the other. This objection, however, will not stand the test of examination. It is true that they are distinct and different animals, but this difference consists merely in their organization. In both, the action of the heart, the nervous influence, &c. are, as far as we can possibly determine, precisely the same. A heart, a brain, a spinal marrow and nerves are attributes of both; and these, to all appearance, are in each governed by the same laws, and serve the same purposes; and I do conceive, that if the heart be governed in its action by the medulla spinalis in one class, it should be so in the other:—that if, on the contrary, it be proved, that the heart of a cold blooded animal is indebted for its action to a "vis insita," we are fully warranted in the conclusion, that the same power is productive of a similar effect in warm-blooded animals. In fact, Le Gallois seems to entertain the same opinion, as a short extract from his memoir will show. There is an "exact uniformity of the plan by which the nervous power is organized in all vertebral animals, from man down to the reptile; for it is a curious and very important observation of Mr. Cuvier, that the nerves arise, and distribute themselves with exact similarity in all these animals. But," adds he, "the warm-blooded animals are much less suitable than the reptiles for the researches I have just mentioned, because after the section of the medulla, they can only be kept alive by the inflation of the lungs, which prevents their being left to themselves, in order to study their motions; and because, after the partial decapitation, the hemorrhage from the cerebral vessels soon destroys the functions of that portion of the brain which has not been taken off, by stopping the circulation." In another place, he remarks, "that one of the greatest difficulties was to reconcile the facts observed in cold-blooded, with those observed in warm-blooded animals, in the adult state—that fœtuses exhibit a character, very analogous to that of cold-blooded animals. In them, therefore, the bond was to be sought, which would unite the phenomena presented by cold-blooded animals, and the adult mammiferous, submitted to the same experiments." It therefore appears, from LE GALLOIS' own statements, that cold-blooded animals are decidedly preferable. Reflection also convinced me, that the contradictory results of the experiments hitherto performed, were referrible to the readiness with which warm-blooded animals are affected by slight causes; for we know that a very trivial cause, such as anger, joy, or any emotion of the mind, will affect its action very materially: and to have selected the very tender rabbit for such violent experiments, when more proper animals were so abundant, seems to want explanation. If, however, warm-blooded animals are preferred, let there be some selection. Many of these animals are affected by the most trifling experiments, with great severity, even to the destruction of life—others will suffer but slightly from much more severe measures. Willing, however, to discover the truth, I am ready to grant weight to the objection, which it does not really possess; and shall, with great pleasure, abandon any idea or theory which is unsupported by facts and experiments. If, upon repetition, these experiments should not be confirmed, and prove the doctrine for which I am contending, and others more forcible be adduced in support of an opposite theory, I am ready to make to truth the sacrifice of my own opinion.

It will not, I think, be doubted, from the experiments referred to, that the heart of the cold-blooded animal is indebted for its action, to a power, inherent in itself. With regard to warm-blooded animals, their nature will not allow such decided results. They bear the destruction of such an important organ as the spinal marrow, very imperfectly; yet the following experiments add strong confirmation to those already performed, and are, I think, perfectly conclusive. The cat, being well calculated for experiments of this nature, and easily obtained, was accordingly preferred. The principal part of these experiments were performed in the presence, and with the assistance, of my friend Dr. O. H. Taylor, and of others, who profess themselves willing to vouch for their accuracy and correctness. It may be well to mention, that every experiment that was performed, will be related, so as to preclude the possibility of deception.

Experiment 1st.—To observe the natural action of the heart, without the destruction of the brain or medulla spinalis, was the first object that demanded our attention. With this view, the following experiment was performed. The cat being secured upon the table, in two minutes the heart was exposed, and its action observed. This was strong and regular, making 130 pulsations in the minute. In three minutes, (always counting from the time the animal was laid on the table,) the pulsations had become irregular and intermittent. In six minutes, the breathing ceased, and sensibility and motion became extinct. The regular and successive action of the auricles and ventricles was now lost, the former making 148, and the latter only 68 pulsations in the minute. In twenty minutes, the pulsations of the auricles were reduced in frequency to 80, and those of the ventricles to 20, in the minute. Nervous twitchings of the pectoral and other muscles, were very evident. The coronary vessels of the heart were slightly injected. The natural action of the heart ceased in thirteen minutes, but it could be excited by irritating the heart with a knife. This organ now became very much distended: a large artery in the thorax was divided, through which blood flowed freely from the heart. The heart was now suffered to remain ten minutes, and upon being again irritated, commenced an irregular and rapid pulsation, which continued for a short time. After having been at rest some time, its action commenced again spontaneously; making in the first quarter of a minute, 12 pulsations; in the second, 10; and in the third, 8. At fifty minutes, the pulsations had become very weak and slow. In fifty-eight minutes, the action had apparently ceased; but upon irritating the heart violently, a slight and imperfect action was manifested:—after this it entirely ceased.

Experiment 2nd.—In opening the thorax of this cat, the carotid artery was cut, and the blood escaped. The heart was now observed to pulsate slowly and irregularly. The vertebral canal was next opened, and a wire passed through the canal into the head, and the whole source of nervous power destroyed. The heart was observed much distended: one of the auricles being opened, allowed the escape of some blood. The heart now pulsated as before, slowly and irregularly, and in a few minutes entirely ceased.

This one experiment thus proves, that the motion of the heart continues, after the destruction of the medulla spinalis and brain. "But," says LE GALLOIS, "those motions which still subsist, either after this destruction, or after the heart has been freed from the action of the nervous power in any other manner, are motions without power, and perfectly analagous to the irritable motions observed in the muscles, for a longer or shorter time after death. In the latter," continues he, "those motions only take place, when the muscle or the nerve distributed to it, is directly stimulated; and one stimulus produces only one motion. In the heart, the motions are repeated spontaneously, because the blood it contains is its natural stimulus." From this, it was natural to conclude, that if the heart was removed from the body, and perfectly emptied of its blood, the action ought immediately to cease from the want of its proper stimulus. If it could also be made to appear, that, as in cold-blooded animals, the circulation still continued, the objection would be completely refuted. We therefore continued our experiments as follows:

Experiment 3d.—Before this experiment was commenced, the action of the heart was regular, making 104 pulsations in a minute. The medulla spinalis was divided, and a red hot wire passed through the vertebral canal, and into the brain. Sensibility and motion were completely destroyed: the pulsations of the heart were very slow, but were gradually increasing in frequency. The heart, together with the arteries and veins, was distended with blood; and a large artery, upon being divided, discharged blood freely, at the several contractions of the ventricles. The heart was now taken from the thorax, and laid upon the table, after which it continued to pulsate some time. The frequency of its pulsations gradually diminished, and in ten minutes, they had ceased altogether.

Experiment 4th.—A cat was laid upon the table, and an opening made into the vertebral canal, near the head. In ten minutes, the wire was thrust through the whole spinal cavity, and into the head. In seventeen minutes, the heart was brought into view, when the contractions of the auricles and ventricles were found regularly to succeed each other. The frequency of the heart's pulsations gradually increased in a regular ratio; being in the first quarter of a minute 18, in the second 24, in the third 32, and in the fourth 44; making the whole number of pulsations in the minute, 118. The coronary vessels were distended with blood; one of which upon being divided, discharged blood at every contraction of the ventricle. From this time, the pulsations of the heart were gradually reduced in frequency, and became irregular. In thirty minutes, the heart was separated from its connexions with the thorax, and divided transversely into two parts. These separated portions continued to pulsate until the fortieth minute: after which, all action ceased.

Experiment 5th.—The action of the heart in this animal, before the commencement of the experiment, was observed to be regular, with 96 pulsations in the minute. In three minutes after the animal was laid upon the table, the medulla spinalis and brain had been destroyed by a large wire. In ten minutes, the thorax having been laid open, and the heart exposed, 80 regular pulsations were counted in the minute; they were, however, weaker than before the destruction of the nervous power. One of the carotid arteries was punctured in fourteen minutes, and the blood was observed by all present, (Drs. Taylor, Smith, and myself,) to flow freely from the opening, *per saltum.* In sixteen minutes, the coronary vessels were seen well injected with blood, and the pulsations of the heart, which were now noticed, were regular, and 34 in the minute. In twenty minutes, the pulsations were reduced to 20; in twenty-two minutes, to 16; in twenty-five minutes, to 12; in thirty minutes, to 5, and in thirty-two minutes, to 3 in the minute. These pulsations had now become irregular, but there was still perceived some action. The heart was now, (thirty-seven minutes from the commencement of the experiment,) removed from the body, and divided into two parts by a horizontal section. Even now, some motion could be excited in the auricles and ventricles, by irritating them with the point of a scalpel. In forty minutes, the motion was still very evident upon irritating the separated portions; but very soon after this, it ceased entirely.

Experiment 6th.—The pulsations of the heart of this animal, before the experiment was begun, were 240 in the minute. Four minutes were consumed in destroying the medulla spinalis and brain, and two more in opening the thorax and exposing the heart. The contractions of the auricles and ventricles, which succeeded each other with great regularity, were 120 in the minute. The coronary vessels were beautifully injected, and a small artery which was opened, discharged some blood. In ten minutes, the ventricles had ceased to beat, but the auricles were making 80 contractions in the minute, with great regularity. Spasmodic twitchings were, in this experiment, observed in the diaphragm. One of the pulmonary arteries, upon being emptied of the blood it contained, immediately became again filled, and, upon being divided, bled. In twenty minutes, the contractions of the auricles were regular, and 36 in the minute. In thirty minutes, the right auricle alone continued to pulsate, which it did at the rate of 12 times in the minute. In forty minutes, it pulsated, though very irregularly, 8 times in the minute. In fifty-two minutes, the auricles and ventricles could be made to act by irritation; but in seventy minutes when they were again examined, all motion was at an end.

These experiments are sufficient to remove every objection, and we are again forced to the conclusion, that the vis insita of Haller is the cause of the action of the heart in the warm, as well as in the cold blooded animals. Any other conclusion is impossible, from the direct tenor of all the preceding experiments. But independent of experiments, facts are not wanting, to the support of the theory. We know that in the embryo, the first things capable of being observed, are the brain and the pulsating heart; and that these organs, especially the last, bear a vast preponderancy in size and perfection, to every other part of the fœtus. Now, here it is next to an impossibility, to conceive of the heart deriving its action and power, so freely and perfectly, from such a small and imperfect organ, as is the medulla spinalis at this period.

Besides, the continuity of the medulla has been known, in several instances, to have suffered an interruption and partial annihilation in the human species, without inconvenience to the action of the heart. The following dissection and examination of the spinal marrow in a case of curved spine, related by Dr. RULLIER, in Magendie's Journal, are very interesting and conclusive. After observing that the brain was very firm and sound, he goes on to state, that "the vertebral marrow, examined with care, in its place and by its posterior face, appeared to us in its natural state, from its origin as far as the fourth pair of cervical nerves. The two inferior thirds of its dorsal part were equally sound; but between these two parts, viz. for about six or seven inches in length, comprised between the two inferior thirds of the cervical region, and the upper third of the dorsal region inclusively, and corresponding to the eighth or ninth pair of nerves, this part displayed a most remarkable alteration: it was soft to such a degree of fluidity, that the canal formed by the dura mater, appeared to be full of a real liquid, which followed the direction of its gravity up or down according to the position of the body; but this liquid, which thus distended the covering of the marrow, stopped precisely at those parts of this organ which remained in their natural state. A small opening being made in the dura mater, immediately let a quantity of this fluid run off: when the membrane had been cut through, the spinal marrow was seen covered with its proper membrane; it was of a reddish-gray, and extremely soft; it presented a sensible fluctuation,* and the opening of its membrane allowed a liquid, mixed with small flakes of medullary matter, to run out. We afterwards made a large opening, and a longitudinal incision in this part of the marrow, which presented to our view, an elongated cavity filled with a sort of grayish light red fluid, in which a great number of red and extremely thin capillary vessels were dispersed." Mr. MAGENDIE makes an important remark on this case, in connexion with the subject before us. "With regard to the motions of the heart," says he, "the fact of Mr. Rullier is very curious; for after the investigations of Le Gallois, a considerable diminution of the mass of the spinal marrow ought so to diminish the force of contraction in the heart, that the blood would not be able to arrive continually at the lower extremities; and yet the circulation was perfectly maintained."

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* The appearance of this part of the marrow was such, that each of the assistants exclaimed, that there was a dropsy in the marrow itself; in effect, the natural colour of the part had disappeared, and was replaced by an almost colourless liquid, in which some flakes of medullary matter were floating.—MAGENDIE.

Two cases deserving attention have also been related by Dr. Olivier. The first of these occurred in a child of eight or nine years of age, in which a complete deficiency of the spinal marrow existed, from the ninth dorsal to the first lumbar vertebra, that is, about four inches. In the other, a girl of thirteen years, at the lower part of the dorsal region, the nervous pulp, reduced to a putrid state, was converted into a pultaceous matter, and was deficient for four or five lines. Dr. Good, in his invaluable treatise on the study of medicine, while speaking of some subject connected with the present, says, "it is well known that the heart, when dissected from the pericardium, has leaped from the table."

In Le Gallois' experiments, also, we could observe that nearly the whole of the spinal marrow might be destroyed, even in the rabbit, without the destruction of the action and power of the heart. This action did not cease, unless a large portion of the spinal marrow was destroyed simultaneously. Indeed, he himself seems to feel the full force of the objection, for he remarks, that "among the difficulties which embarrassed me most, were the differences, sometimes considerable, which I have observed when I wished to determine with some precision, the exact length of the spinal marrow necessary to the maintenance of the circulation. "I proceeded," says he, "as if groping in the dark." And a little further on he says, "after many fruitless efforts to elucidate this dark question, I determined to abandon it, not without regret at having sacrificed so many animals, and lost so much time." So that, reasoning from the experiments of Le Gallois, we should be led to adopt a conclusion, directly contrary to what he would wish.

Dr. Jackson, my friend and preceptor, informed me that in an experiment performed by him on a cat, which was put into a jar containing oxygen gas, the heart pulsated strongly for eleven hours. Now, had not the heart an independent action, it would be difficult to conceive the cause of the increase of its action in this decisive experiment.

I may, in conclusion, mention a fact which seems to puzzle even Le Gallois to explain, or conform to his theory. It is, that many cases are recorded of fœtuses having been born, in whom there existed no brain or medulla spinalis. Several instances of this kind have been related, and Le Gallois admits that he knows of two instances, in which we are assured that they have been born alive, without either brain or medulla spinalis. This fact is irresistible, and proves, beyond the possibility of a doubt, that if life and the circulation of the blood can exist without these organs, they are not necessary to the action and propulsive power of the heart. That Le Gallois should admit this fact, and afterwards offer as an objection to the vis insita, that fœtuses had been born without a brain, is indeed singular. In reality, every circumstance which he has adduced, can be (especially since the discoveries of Messrs. Bell and Magendie) much more easily explained upon the hypothesis of a vis insita, than upon his own theory, however well supported, in appearance, by experiments and observations.

Article VIII.—*Cases Illustrative of the Remedial Effects of Acupuncturation.* *By* Franklin Bache, M. D.

From the attention recently bestowed on this revived remedy, both in England and on the continent of Europe, by practitioners of eminence, and from the numerous cases detailed in the foreign Journals of its efficacy, in various affections, I was favourably impressed in regard to its powers, and determined, on the occurrence of a proper opportunity, to give it a fair trial. My situation, as assistant physician to the State Penitentiary in this city, soon afforded me this opportunity; and the cases which I am about to detail, occurred in my practice among the prisoners.

The cases, in which I used acupuncturation, were, for the most part, painful affections, and may be arranged under the four general heads of *Muscular Rheumatism*, *Chronic Pains*, *Neuralgia*, *and Ophthalmia.*

I. MUSCULAR RHEUMATISM.

Case 1st. *June* 30, 1825.—J. M. æt. 33, complains of pain in the small of the back, on the left side of the spine, rendered very acute upon flexing or extending the trunk. Acupuncturation being determined on, an attempt was made to insert a needle into the painful part, about two inches from the vertebræ of the loins, and on a line with the spine of the ileum; but in consequence of the patient suddenly receding, from the sharp pain excited by the needle, thereby withdrawing the instrument, it proved unsuccessful. Another needle was then tried, somewhat lower down, and successfully inserted to the depth of half an inch; although, in its passage, it caused a great deal of pain. Upon the patient's starting, in consequence of the acute pain produced by this needle, he perceived that his back was no longer painful on motion. Accordingly, the needle was withdrawn, after having remained half an hour. The patient now tested the state of his back, by motions performed in various directions, and declared that all painful affection was entirely removed; there remaining only a slight sensation of stiffness. An areola was formed round both punctures.

July 2.—The morning after the operation, the pain returned, but without half its original force. The patient, to-day, however, has only a sensation of numbness in the back, but no pain.

Oct. 26.—The subject of this case states, that the sensation of numbness went off in a few days, and, up to the present moment, he has had no return of pain.

Case 2nd. *June* 30:—D. G. æt. 43, has been affected for the last two months with a pain in the right shoulder, in the situation of the deltoid muscle. The pain has varied in force at different periods, and is always increased by motion.

A needle was inserted to the depth of an inch, into the substance of the deltoid. At different stages of its introduction, the instrument occasioned very severe pain. After remaining inserted half an hour, the needle was removed; and the patient was very much pleased to find, that the motions of the shoulder, heretofore so painful, could now be performed with facility, the pain experienced being inconsiderable. A remarkable circumstance occurred during the time the needle remained inserted. At four several times, a pain shot, with the velocity of lightning, through the affected part. This was so severe, as to cause the patient to scream out. Observing him attentively, the concussion his frame received, seemed to resemble that produced by a powerful shock of electricity.

In this case, a very faint and small areola was formed. The needle was also surrounded with a slight elevation of the skin, forming a minute button.

July 2.—To-day there is no vestige of pain. The patient came to state his recovery.

Oct. 26.—Up to the present time, no pain has been experienced; but some stiffness still remains.

Case 3d. *Oct.* 2.—J. B. æt. 39, has been affected, at intervals, for the last four days, with severe pain in the small of the back, inclining to the right side, and running over the hip to the right knee. When it occurs, it is usually the consequence of the motions performed in sitting, and rising from a seat, and is sometimes very severe, producing a sensation as if the hip joint were wrenched. These severer attacks leave a sensation of numbness, extending down to the knee. This patient received an injury in the back about four years before, produced by a fall, the force of which was received on this part; and it is to this circumstance that he attributes the occasional attacks of pain in the back, to which he has ever since been liable.

Four needles were inserted in this case; two nearly in a line, over the right half of the sacrum, the 1st, at the distance of three inches from the spinous processes of that bone, to the depth of three-quarters of an inch,—the 2nd, about an inch from the same processes, to the depth of an inch. The 3d needle was introduced about three inches externally to the 1st, in a line with the great trochanter, to the depth of an inch and a quarter, and the 4th, half way between the 3d and the trochanter, to the depth of an inch and three-quarters. All the needles gave considerable pain at particular moments of their passage, and, except the last, were surrounded with areolæ.

The patient being directed to stand, in order to observe the effect of the operation, the last needle inserted was found to cause much pain, which appeared to arise from the contraction of the muscle, into which it penetrated, throwing the skin into folds on its upper side. The patient, feeling a little faint, was desired to sit down, and the painful needle was immediately removed, after having remained about ten minutes. Shortly afterwards, the three remaining needles were taken out; the 1st, and 2nd, after having remained about an hour, and the 3d, twenty minutes.

The patient being now directed to ascertain the state of his back, declared that it was perfectly well. The motion of stooping, the performance of which was almost impossible before the operation, can now be performed without the least pain.

In addition to these cases, I may mention one of stiff neck under this head. The affection had existed for a week, and resisted the use of cups and other topical applications. The least motion of the head occasioned severe pain. The insertion of a single needle caused the pain immediately to disappear.

II. CHRONIC PAINS.

Case 1st. *June* 14.—F. D. æt. 40, is affected with pains, which have their seat more particularly in the right hip, thigh, and knee, extending sometimes to the ankle. The affection has existed, in a greater or less degree, for a number of years. A trial of acupuncturation being determined on, one needle was inserted into the upper and front part of the thigh, and another, obliquely upwards, into the outside of the upper part of the knee. On the penetration of the first needle, the pain in the thigh was immediately removed, and that of the knee joint, very shortly relieved by the second. The needles produced but little pain at the time of their penetration; but, after remaining for some time, gave rise to a burning and smarting sensation.

Oct. 26.—At this date, the pain which remains is very trifling.

Case 2nd. *June* 21.—G. C. C. æt. 55, has been affected, at intervals, for the last four years, with a pain in the top and back part of the head. For the last fifteen months, it has been nearly constant. Cupping and blistering have been frequently resorted to, but only with temporary relief.

A needle was inserted obliquely into the crown of the head, to the depth of an inch and a half. No sooner was the instrument inserted, than the pain in this situation, entirely disappeared. A second needle was then introduced into the back of the neck, and had the effect of entirely removing the pain in the back of the head, in the course of fifteen minutes. After the lapse of an hour, the patient still continued free from all pain, except a smarting sensation, occasioned by the needle last inserted.

June 22.—The needles were withdrawn to-day, after having remained twenty-four hours. The cure still continües complete.

Oct. 26.—The pain in this case has never returned up to this date.

On the 16th of July, the subject of this case, requested me to try acupuncturation for a swelled and painful gland under the jaw, connected with some soreness of the throat on the same side. I readily consented, and the effect of the needle was really surprising. In fifteen minutes, the pain was very much diminished, and at the end of twenty-four hours, at which time the needle was extracted, the pain had entirely subsided, and nothing remained but a slight soreness. In five or six days, the swelling disappeared, and has not returned up to the present time. (Oct. 26.)

No conclusion can be drawn from an isolated case; but if subsequent experience should establish the power of acupuncturation to effect the rapid absorption of enlarged glands, its benefits would be incalculable.

Case 3d. *June* 28.—A. G. æt. 64.—In this case, pains had existed, at intervals, for sixteen years, being seated, for the most part, in the knees, and running up to the hips. This day inserted three needles,—the first, in front of the thigh, two inches above the patella, to the depth of an inch and a quarter; the second, into the inside of the leg, near the knee joint, to the depth of an inch; and the third, over the scapula, one inch deep, for a pain occupying that part. They were all withdrawn after intervals of fifteen or twenty minutes. The first and second needles relieved the pains in their vicinity, in a few minutes after their insertion; the third produced no sensible effect.

July 2.—The patient experiences a dull sensation, not amounting to more than one-third of the original pain. The relief continued for about ten days, after which the pain returned. The affection finally disappeared under the use of the volatile tincture of guaiacum.

Oct. 26.—None of the original pain remains.

Case 4th. *July* 17.—H. M. æt. 24.—This patient has been affected, for the last four months, with a constant pain over the sternum, about an inch and a half above the ensiform cartilage. Two needles were introduced,—one, in an oblique direction at the seat of pain, to the depth of three-quarters of an inch; the other, one inch below this cartilage, to the depth of one-third of an inch. After remaining about three-quarters of an hour, they were withdrawn. In the course of several days, the painful affection entirely disappeared, and, up to the present time, (Oct. 26,) has not returned.

I had another case, which may be arranged under this head, in which the patient was affected with pains in both knees, occurring with most severity at night. Two applications of the needles, on successive days, entirely removed the affection.

III. NEURALGIA.

Case 1st. *July* 18.—J. R. æt. 39, was attacked, the day before, with severe pain in the forehead, thence shooting, through the back of the neck, to the right shoulder, where it became stationary. To-day, a needle was inserted into the shoulder, to the depth of three inches and a quarter. During its passage, the pain was translated to the elbow. In fifteen minutes, however, it returned again to the shoulder. In an hour and a quarter, the needle was withdrawn, without producing any relief.

July 19.—Acupuncturation was again tried to-day. A needle was inserted over the deltoid, to the depth of an inch and a half, and removed in about an hour. No benefit, however, was experienced, and the next day, the affection was relieved by cupping, and disappeared in the course of a few days.

Case 2nd. *August* 5.—J. T. æt. 36, has for several years been affected, at intervals, with a pain over the right eye. A needle was inserted into the part affected, to the depth of three-quarters of an inch, and allowed to remain ten hours. The effect was the complete removal of the pain.

The next day, the pain returned partially, but in a few days entirely disappeared.

Oct. 26.—No return of pain up to the present date.

Case 3d. *Sept.* 26.—J. H. B. æt. 23, has been affected, for the last six months, with a pain, extending from the right hip, along the back part of the thigh, down to the knee, and occasionally occurring in very severe paroxysms. This day, a needle was inserted into the inner part of the thigh, four inches above the knee, to the depth of one inch, and allowed to remain three hours. Immediately after its insertion, the pain became very severe for the space of five minutes, and produced a disposition to faint; after which, it gradually subsided, and, in a short time, disappeared entirely. At the time the needle was withdrawn, the pain was not felt in the recumbent posture, but was induced, though with less than its original force, upon standing or walking.

Sept. 27.—The pain having returned, four needles were this day inserted,—the first in the centre of the gastrocnemius, and the second, third, and fourth, in a longitudinal direction, into the back part of the thigh. After remaining four hours, they became so painful as to require removal. The diseased pain was now found nearly subsided.

Sept. 28.—The pain has recurred with nearly its original severity. The patient's impression is, that the needles have afforded him no relief.

Oct. 4.—Having been much struck with the result of a case, somewhat similar, in which remarkable relief was obtained from performing the acupunctures on the back, (see case third, under muscular Rheumatism,) I induced this patient to submit to another trial of the needles. Five needles were accordingly inserted; three over the right half of the sacrum, about an inch from its spinous processes, and the fourth and fifth, lower down, in the course of the ischiatic nerve. During the operation, the patient was seized with several excruciating paroxysms of pain, which had the peculiar character of suddenly shifting from the small of the back, to the calf of the leg. Occasionally the pain would subside instantaneously, from a degree of intensity, sufficient to make the patient scream out. A sixth needle was attempted to be inserted over the glutei muscles; but, a severe paroxysm of pain coming on, the attempt was desisted from. At this time, the patient seemed to suffer so severely, that, at his own request, he was allowed to take 60 drops of laudanum. With respect to these paroxysms of pain, it deserves to be mentioned, that they were precisely similar to those experienced before acupuncturation was resorted to.

About half an hour after their insertion, the two lower needles were removed. Another effort was now made to insert a sixth needle, which succeeded, though not without exciting a great deal of pain. The buttock and upper part of the thigh was observed to be covered with perspiration.

The remaining needles were removed, after having remained in the tissues about three hours. Immediately on their removal, the patient found himself free from pain, arose from bed, and, upon freely exercising his limbs, had no return of it.

Oct. 5.—To-day the patient experiences some shooting pains when he attempts to walk, but is perfectly easy when quiet. Three needles were inserted over the sacrum in the morning, and removed in the afternoon. They caused a great deal of pain during their introduction; but at the time of their removal, and for some hours previously, all pain had disappeared.

Oct. 6.—Pain this morning very trifling. The patient requesting to have the needles again tried: four needles were inserted in the same region as yesterday. During their penetration, the pains appeared to shoot towards their points. The operation was much less painful than on former occasions. After remaining seven hours, the needles were extracted. The result was, that the pain had disappeared, and was only excited in a slight degree by walking.

Oct. 8.—This day the patient had a return of pain, principally seated in the calf of the leg. A needle was inserted into this part to the depth of an inch, with evident relief.

Oct. 9.—The needle inserted yesterday was taken out to-day, all pain being absent, except a slight one immediately round the needle.

Oct. 10.—The pain having returned to-day, two needles were inserted into the back, and allowed to remain between six and seven hours. During their insertion, the pain was very severe; but after the lapse of half an hour, all painful affection subsided.

Oct. 11.—The patient was entirely free from pain all last night, and is equally easy this morning.

Subsequently, the subject of this case had repeated returns of his painful affection, though in a mitigated form. No progressive improvement having been observed for some time past from the employment of the needles, their further use was abandoned, and recourse was had to other remedies.

It may conduce to give some idea of the obstinacy of this painful affection, to enumerate the different remedies afterwards successively employed. These were, three caustic issues, each of the size of half a dollar, cicuta, carbonate of iron in large doses, exhibited at first alone, and afterwards at the same time with digitalis. During the whole course of the affection, it was found necessary, at various times, to mitigate the sufferings of the patient by a resort to laudanum.

Dec. 2.—This patient has been gradually improving for the last three or four weeks, under the use of the carbonate of iron and digitalis, being at present able to attend to his work as a painter and varnisher. Two of the caustic issues are healed, the third nearly so. The affected limb is somewhat smaller than the other, and, from its weakness, gives rise to a slight lameness.

A case of shooting pain in the back of the head, suffering an exacerbation once in twenty-four hours, may, perhaps, be arranged here. Two applications of the needle produced partial relief only.

IV. OPHTHALMIA.

I have had two cases of obstinate ophthalmia, in which acupuncturation was resorted to a number of times, with various success. Upon the whole, however, I am strongly inclined to believe, that the needle will be found a valuable remedy in the intense pain, which so frequently accompanies this disease. Its effects were, in many instances, very decided in this way. On one occasion, the irritability of the eye was promptly and remarkably lessened.

While I am thus convinced, that acupuncturation has a decided influence over the pain attendant on inflammations of the eye, I am very far from believing, that, unaided by other means, it will cure these affections. But, at the same time that the usual general and topical remedies are employed, the needles may be resorted to as an important auxiliary.

Besides the foregoing cases, I have had several of minor importance, in which acupuncturation was employed. These were, 1st, a case of headach, occurring in bilious fever, in which the pain was relieved, but returned the next day with its original violence; 2nd, a case of excruciating pain in the forehead and temples in an epileptic patient, in which the needles had no effect.* 3d, A case of painful elastic tumour, near the elbow joint, the consequence of a sprain, in which the remedy failed; and lastly, a case of dull pain in the side, the consequence of acute pulmonic inflammation, in which the operation produced no permanent benefit.

In the foregoing observations, I have said nothing of the rules to be observed in the introduction of the needle;† as this subject did not come within the scope of my design in writing this paper. But without entering into these details, I may be permitted to remark, that the pain caused by its introduction is not so uniformly slight as some of the French writers would lead us to suppose. It is, indeed, true, that in some cases, perhaps the majority, the pain excited is remarkably moderate; but, on the other hand, in some instances, it is quite severe. Without doubt, the state of the part in which the needle is inserted, must have a great influence in determining the result in this respect.

So far as I can judge from my limited experience, my impression is, that acupuncturation possesses a remarkable power in removing and mitigating pain. This agency, taken in connexion with its safety, and the great facility with which it is performed, points to it as a proper remedy in almost all diseases, whose prominent symptom is pain. I have myself used it in more than twenty cases, and not in a single instance has any unpleasant accident occurred.

In conclusion, it remains for me to acknowledge my obligations to my friend Dr. HARRIS, who kindly assisted me with his advice, and operated for me in several of the first cases, in which I resorted to the remedy.

POSTSCRIPT.—*March* 8, 1826.—Since the above was written, I have had in the Penitentiary and in private practice, up to the present date, 17 cases of painful affections of various characters, in which acupuncturation was employed. Seven of the cases were completely cured, seven considerably relieved, and in the remaining three cases, the remedy produced no effect.

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* In this case, the pain continued to increase, until a state of complete phrenitis was induced, which was combatted successfully by bleeding, cupping, and blisters to the head. Its sequel clearly showed that it was not a proper case for the employment of acupuncturation.

† The reader, who may desire information on this point, is referred to my translation of Dr. MORAND's Memoir on Acupuncturation, recently published in this city.

ARTICLE IX.—*Two Cases of Poison, from eating of a Pheasant.*—By N. SHOEMAKER, M. D., one of the Physicians to the Lying-in Department of the Alms-House Infirmary.

IT is a well known fact, that during the winter season, especially when the ground is covered with snow, Pheasants have recourse to the *laurel*, for sustenance, which, although it may be a harmless article to them, is nevertheless known to be an active poison. By thus feeding, their flesh becomes so charged with the deleterious qualities of this vegetable, as to be capable of producing very alarming symptoms, when taken into the human stomach, as the following cases will manifest.

CASE 1st.—On the afternoon of the 14th of the 2nd mo. 1826, I was requested to visit, in haste, the wife of J. D., who was said to have been suddenly attacked, and to be very ill. I immediately obeyed the call, and on arriving at the house, I found her with incessant retching, and complaining of a distressing pain, on the top of the head, which extended down in the direction of the cervical vertebræ, with cold extremities, and pulseless.

Her husband, who is an intelligent man, informed me, that she had dined on a pheasant,—that in about half an hour after dinner, she was seized with sickness of stomach, followed by a temporary blindness, and that he believed she was poisoned.

I desired the servant maid to examine the spot where the bird had been prepared for the spit, to ascertain whether any of the *laurel* could be found. She soon returned, bringing in her hand a considerable number of the fragments of the leaves of this vegetable. This discovery confirmed our suspicions of poison.

Supposing there might still be remaining in the stomach, some portion of the poisonous article, I reflected upon the best method of dislodging it. To administer the common active emetic medicines, where the system was already brought into a state of great prostration from the powerful sedative effect of the poison on the stomach, appeared to me a practice that would be inadmissible. It occurred to me, that as there was combined with the stimulant qualities of *mustard* an emetic principle, that it was an article peculiarly suited to this case. I accordingly gave her a table-spoonful of the common flour of mustard in some warm water, which increased the efforts of the stomach, without appearing to add to the existing debility. After I was satisfied that nothing more remained in the stomach, from the water being ejected nearly as clear as she drank it, I ordered a large sinapism to be applied to the epigastric region, and smaller ones to the wrists and ankles; gave her a small tea-spoonful of laudanum, with as much ether, and directed warm brandy and water to be given her to drink.

This plan succeeded in putting a stop to the retching; her extremities soon became warm, and her pulse returned at the wrist; but for a considerable time, it beat only *forty-three strokes in a minute*. On calling in the evening I found her comfortable, and able to take a cup of tea.

Case 2nd.—While I was occupied in administering to this patient, my attention was suddenly arrested by a strange noise, which proceeded from a young woman then in the room, and who had been engaged but a moment before, in assisting me. Upon turning to her, I found she looked extremely pale, and was breathing with great difficulty, which appeared to arise from a spasmodic affection of the glottis, which so contracted the aperture, as to occasion, in the act of respiration, the unusual sound which first attracted my attention. She complained of extreme sickness of stomach, which was soon followed with a temporary blindness, and a severe pain down the back of the neck. Her extremities became cold, and the pulse beat only *forty strokes in a minute*, and very feebly.

Being informed that she had eaten of the same pheasant, I had no hesitation in referring the symptoms, she then laboured under, to that cause. I immediately gave her a table-spoonful of the *flour of mustard* in a glass of warm water, which enabled her completely to disgorge her stomach; after which, a dose of laudanum and a little warm brandy and water, effectually relieved her.

ANALYTICAL REVIEWS.

Article X.—*Essai sur les Irritations intermittentes; ou nouvelle théorie des maladies périodiques, fièvres larvées, fièvres pernicieuses, et des fièvres intermittentes en général, exposée suivant la doctrine de* M. Broussais, *et appuyée d'un grand nombre d' observations.* Par P. J. Mongellaz, D. M. P. 2 vols. 8vo. pp. 859. Paris.

It has often been asserted by those who deny the correctness of the modern pathological views of fevers, that were there no other proofs likely to be alleged against them, intermittents might still be cited triumphantly, as of themselves, sufficient to establish the fallacy of the theory; since irritation and inflammation, on which fevers are maintained to depend, cannot be periodical, but must invariably assume the continued type. Such, indeed, was the general belief, before the commencement of the present century; and it required no ordinary power of mind, and a careful investigation of disease, to overthrow all the prejudices of the schools, and show that, so far from the above being true, irritations and inflammations not only might be, but actually were, often periodical. To establish this position firmly, was an object of considerable moment, as on its correctness rested, in a great measure, that of the views adopted in respect to the pathology of the periodical fevers of nosologists. To Dr. Broussais we are indebted for this view of the subject; for although a great number of cases of intermittent irritations, could be collected from the writings of physicians of all ages, still they were explained agreeably to the theoretical notions of the day; and recourse was had, on more occasions than one, to the most strange and absurd hypotheses. Physicians were not a little astonished, therefore, when Broussais laid it down as an axiom, that "morbid irritation may be intermittent in all the organic apparatuses and systems."—(Propos. 218.)

Whatever merit may be attached to this theory of intermittent diseases, it surely commands attention; we shall, therefore, endeavour to lay before our readers, an analysis of the volumes, of which the title will be found at the head of this article, as we do not find the views of M. Broussais, on this particular point of pathology, so fully, and, we believe, so faithfully embodied, in any other work that has emanated from his school. We must premise, however, that we intend confining our task to the mere labour of analysis, without espousing either side of a question, on which we find such a discrepancy of opinion in Europe and this country. Nor shall we here follow the ordinary custom of merely transcribing a few of the leading passages of the author; thinking, as we do, that a greater service will be rendered to our readers by giving them an essay on the subject, the basis of which we borrow from Mongellaz; using at the same time, some remarks and facts, scattered through the writings of Goupil, Begin, Montfalcon, and Broussais himself.

In entering on this subject, we must remark, that M. Mongellaz, in imitation of Broussais, divides irritations into the inflammatory and hemorrhagic, which are seated in the red capillaries;—into the sub-inflammatory, or that located in the white capillaries;—and finally, into the nervous irritation, which, as its name implies, is seated principally in the nerves. He describes the disease in its different types, as attacking these various parts, and has displayed much research in collecting, from many sources, interesting cases illustrative of the principles he endeavours to establish. Under each of these heads, he first describes the various forms of the disease, as they appear externally, and next proceeds to an examination of the several varieties of irritation, seated in internal organs.

When we peruse the numerous works published on the subject of intermittent diseases anteriorly to the medical regeneration, effected within the last twenty years, we discover nothing but a mass of confusion. A very few words will be sufficient to demonstrate the truth of this assertion. Thus by authors, once distinguished by the pompous title of medical classics, whenever irritation was located in the red capillaries, and attended with a general disturbance of the system, it was included under the general head of intermittent fevers. Of this class, many varieties were formed. In all cases in which the symptoms arose from the lesion of an internal organ, the irritation of which could not be easily detected, they denominated the disease a *simple intermittent* *fever*. Of this variety are all the intermittent fevers of our country. Whenever the disease was produced by an evident and rapid inflammation, or congestion, or nervous irritation of a well known organ, they gave it the appalling name of *pernicious or malignant intermittent fever*. It was never regarded as an intermittent irritation, attended with general symptoms; but as an intermittent fever, *assuming* the appearance of a hemorrhagic, nervous or inflammatory irritation; and what is still more extraordinary, STRACK, LAUTER, and even ALIBERT, maintained that it sometimes appeared with all the features of a *continued* fever. The work of ALIBERT, which is in the hands of every physician, abounds with cases of *pernicious* fevers, collected from the writings of TORTI, of MORTON, of LAUTER, &c.

Nor were these the only varieties of shape under which intermittent fevers were thought to manifest themselves; for, when the irritation was attended with febrile symptoms, and situated externally, it was denominated a local intermittent fever. Finally, whenever the local irritation was unattended with symptoms of general disturbance—or in other words, whenever it was *apyretic*, the disease was termed a masked intermittent fever, (the larvatæ of some writers,) by which term was understood an intermittent fever without fever—a fever *concealed* under the mask of a hemorrhage, a neuroses, or a phlegmasia, and recurring periodically.

It must appear evident to every one, that some of these views are, to say the least of them, unfounded. They might, perhaps, have suited at an early period of our science, when every disease that was cured by bark, was thought to partake of the nature of an intermittent fever, for which this remedy was deemed the specific; but how they can find advocates at this time, when the doctrine of specific remedies is fast losing ground, and when the study of morbid anatomy has shed so much light on the nature of disease, is not easily to be accounted for. Such views could only arise from the supposition, that intermittent diseases are distinct in their nature from every other disease, deriving their origin from a being, substance, virus, or a something, differing in every way, from every other being, substance, virus, &c. When we endeavour to discover what this can be, we are led, after a laborious search, to conclude that it is nothing more nor less than intermittence, or periodicity itself. Whenever, therefore, this peculiar something penetrates the system, it imprints its periodical morbid characteristic upon it, and, like a true Proteus, can assume every shape imaginable. This is absurd enough, and is surpassed only by the idea of an intermittent fever without fever.

Our author, in imitation of BROUSSAIS, regards all the forms of disease to which we have alluded, as local intermittent irritations, either internal or external, and attended with, or free from, a sympathetic disturbance of the system. In the course of this essay, we shall endeavour to lay before our readers, a summary of the arguments and facts by which this opinion is sustained; previously to which, however, we must notice a few of the objections adduced against it.

One of the most extraordinary arguments adduced by the opponents to the periodical character of irritations, and one which to them appears conclusive, is, that they cannot *understand* how an irritation or an inflammation can be intermittent. In answer to this pretended argument, it might be remarked, that we are not better acquainted with any of the phenomena of health or disease, than with those of periodicity, and that yet we regard them as well authenticated facts. Besides, it is difficult to discover, what can justify a physician in denying any phenomenon, for the bare reason that he cannot understand it. Such a mode of reasoning, however, is not found to be always made use of; for we can prove, that even these sceptics are forced to admit the intermittence of irritation without understanding it. Let us take, for example, the phenomena observed every day in gout. Can any individual, in the full possession of his intellect, deny that the irritation of the toe may disappear suddenly, and be translated as suddenly to some other part of the body? Can we *understand* how this metastasis is effected? and must we, merely because we are unable to explain it, deny its occurrence? In all instances of this sort, we see facts; their explanation is another and distinct question; and the impossibility of arriving at this latter, should not authorize us to doubt the occurrence of the facts themselves.

It requires besides, but a superficial examination of what occurs around us, to discover that the intermittent is as much a natural type as the continued; and that the phenomena of periodicity are not something mysterious and extraordinary noticed only in pathology. When we extend our researches to the other sciences, we readily discover a number of phenomena which assume this type. The astronomer and the naturalist daily notice phenomena, the periodicity of which is well established; and the physiologist cannot fail to remark, that many of the functions of our body are avowedly intermittent. Indeed, if we examine what occurs within us in a state of health, we discover that we are constantly subjected to a kind of periodicity, or alternation of repose and action. A man who enjoys the most vigorous health, is compelled to seek repose, at least in all that regards his functions of relation; for without this intermission of action, these functions would soon lose their activity and energy. If we exercise any one of our organs of sense, it becomes fatigued, and incapable of receiving new impressions. A muscle when long and powerfully contracted, cannot, unless it be allowed some rest, contract any longer. BICHAT remarks, that we may substract, during a certain time, the organs of animal life from the laws of periodicity, by multiplying around them causes of excitement; but they finally submit to them, and at a certain period, nothing can arrest their influence. Worn down by continued watching, the soldier sleeps near his cannon; the slave under the rod of his master; and the criminal in the midst of the most excruciating tortures.

The functions of nutrition present us with similar examples of healthy periodicity. We experience appetite at regular periods of the day. We satisfy the calls of nature at stated hours. There are certain functions of depletion, the periodicity of which is well ascertained, and cannot be altered without manifest danger. Menstruation in women, and hemorrhoids in men are familiar examples of this sort. These are facts which cannot be denied, and yet so far, have defied explanation.

But let us take a cursory view of the arguments we may derive from pathology. Every physician who devotes a careful attention to all the modifications of diseases he is called upon to treat, will confess that an irritation of a strictly continued type is a thing of rare occurrence; and that every febrile irritation presents every day, and nearly at the same hour, an exacerbation of its local and sympathetic symptoms. The fevers of nosologists, even such as are called continued, and which evidently depend on local irritation, manifest daily remissions and exacerbations; and we further notice that the symptoms are usually aggravated every other day. Whenever the exacerbations are preceded by cold, these fevers are called remittents, and assuredly it is not going beyond the bounds of truth to maintain, that between a remission and an intermission there is no difference but in degree. If we can admit, therefore, that an irritation can and does remit, we are at a loss to discover why physicians will refuse to allow that it can intermit;—an intermission being only the total cessation of certain phenomena, of which the remission is the diminution. The one cannot be explained more satisfactorily than the other; and yet the remission of irritation is admitted without the least hesitation by all pathologists. It is well to remark also that the doctrine of critical days is defended, precisely by those who deny the intermittence of irritation. *They* also are those who maintain, that fevers must run their course, and have all a distinct duration. Can they hope to understand how these circumstances occur? All the phenomena we have detailed, should be viewed as facts, and nothing else; and it is of little consequence whether or not we comprehend *how* they are produced. In the present state of our knowledge, no one is justified in denying an evident fact, whatever conclusions may be drawn from it, and however greatly these conclusions may clash with former opinions. Whenever, therefore, we see symptoms which we are convinced, from experience, denote inflammation, irritation, or sub-inflammation, we are compelled, notwithstanding our former prejudices, to acknowledge that these symptoms indicate the existence of these diseases, whether they be continued, remittent, or intermittent.

But this is not a matter of mere speculation—facts may be brought forward to demonstrate the correctness of these positions; for it clearly results from a perusal of the works of TORTI, of MORTON, of MEDICUS, of LAUTER, of ALIBERT, and more particularly of our author, that all varieties of nervous, inflammatory, hemorrhagic and sub-inflammatory irritations, whether external or internal, have, at different times, been found to assume the intermittent type. It is true that all these authors, with the exception of MONGELLAZ, have erred in their opinion concerning the nature of these diseases, and have offered some of the explanations to which we have alluded above. But a more attentive investigation of these diseases —a comparison of their symptoms, with those of the continued type of the same complaint, the nature of which is better known, will show that these writers were evidently led away from the truth, by their theoretical views; and that the symptoms they described, owed their origin to a local irritation, assuming the intermittent type.

As it would occupy too much of our time to describe all these cases in detail, we must take the liberty of referring to the writers we have just quoted; and now proceed to offer some observations on the pathology of intermittent fevers. All our remarks on the subject will apply equally well to the malignant and to the ordinary forms of these diseases; as we cannot discover any good reason for differing in sentiment with Double, and many other writers, who maintain that it is very difficult, if not impossible, to distinguish the former from the latter. The causes of these fevers are precisely the same—their symptoms are also similar, and only appear different from their greater violence in the malignant form. By injudicious practice the common intermittent may be transformed into the malignant species,—the first paroxysms of the latter seldom differ, even in degree, from those of the former; and finally, their treatment is the same. We may therefore conclude with François, (Annales, vol. 7. 26.) that malignant intermittents can only form a distinct class from the others, owing to the violence of the paroxysms, and the predominance of one symptom; or adopt the axiom of Broussais, that fevers called malignant, differ from the common intermittents, only in the violence and danger of the congestions. (Prop. 225.)

On the subject of the nature and seat of these fevers, much difference of opinion exists. We shall not occupy our time in examining and refuting the opinion of Morton on the degeneration of the animal spirits, as the cause of these diseases; or that of Willis, on the excess and defect of the nervous fluid; or of Torti, on states of colliquation; or of Grimaud, on condensation and spasm, or on expansion and atony. These opinions have long since been consigned to a merited oblivion, and we are not disposed to disturb their quiet slumbers. We cannot allow another opinion to pass by unnoticed, however, supported as it is by the high authorities of Baldinger, Alibert and Giannini. These physicians have placed intermittent fevers in the nervous system; the former attributing them to a lesion of the principal faculties of the power of life—the second to a lesion of the sensitive and muscular system, whilst GIANNINI thought them to depend on a debility of the nerves. Nothing can appear more vague than such a mode of reasoning. These physicians, as PINEL has well remarked, could only have seen these fevers at their commencement and termination, when the pathological condition of the organs, on which they depend, cannot well be discriminated. That the nervous system is deeply concerned in the general disorder of the system, is doubtless true. But it is similarly affected in all diseases in which the general system is involved. It is, besides, by the nervous system that all disorders commence. But when by the action of a stimulating cause the nervous susceptibility of an organ becomes increased, and, through it, the whole nervous system is disturbed—or when, by a general cause, the nervous system is excited, the irritation, after a very short time, passes from the whole system of nerves to another tissue, where it fixes itself in a special manner, and the disturbance of the system now depends on this local excitement. Were this not the case, the nervous excitement would soon cease,—would die away, from the power of the economy, which tends to re-establish the equilibrium of health in the system, when destroyed by any cause. Diseases, therefore, which commence by a disturbance of the whole system, become, in a short time, to all intents and purposes, local diseases, attended with sympathetic irritations of the brain, heart, &c. There exist no symptoms indicating this exclusive and essential affection of the nervous system in intermittent fevers; so far from this, they all tend to show that the irritation has passed to some other tissue. Aware of this circumstance, many physicians, rejecting the idea advocated by some, that these fevers are essential, consisting of a group of symptoms unconnected with any local or organic derangement—of something affecting the system without affecting the organs, have maintained that they invariably depend on a local irritation, exciting by sympathy the heart and other organs. That this hypothesis is correct, may fairly be presumed from the great analogy existing between these fevers and other complaints, which are well ascertained to depend on a local organic derangement; as well as by an analysis of their causes and symptoms. Let us examine these several points in detail.

A reference to the writings of the authors we have already named, will prove in the most positive manner, that irritations of the intermittent type, have often appeared *externally*, consequently presenting no difficulty as respects their diagnosis. These irritations consist occasionally of coryza, ophthalmia, phlegmons, erysipelas, and eruptive inflammations in general—rheumatisms, gout, &c. The same reference will show to the unprejudiced mind, that all periodical, local, or masked fevers of authors, are true irritations of the intermittent type.

With these facts before us, less difficulty, we trust, will be experienced in attempting to solve the question which now engages us, than was at first contemplated; for if irritation *can*, and *does* appear externally with the intermittent type, no reason can be alleged for denying that it can assume the same type when seated *internally*. *Probability*, therefore, being in favour of the doctrine we shall endeavour to defend, we may proceed to remark, that when investigated with scrupulous attention, the diseases we have enumerated above, present a great analogy to intermittent fevers so called; allowance being made for the difference of the parts affected, and the degree of the irritation. Nor has this analogy escaped the observations of the older and some of the modern writers; for we find, on examining the writings of MORTON, SYDENHAM, STORCK, VAN SWIETEN, SENAC, and ALIBERT, that they regarded all these complaints as being of the same nature. It is true that their explanations of the formation of these diseases were not such as could well be received at the present day—regarding them as a peculiar form under which the Proteus intermittent fever appeared; nevertheless the *unity* of the theory is all we need adopt. But let us examine the subject in another point of view. Each tissue or organ of the human body performs, in health, a different function, and possesses, in consequence, a degree of vitality, and a mode of organization peculiar to itself. It follows, therefore, that when it becomes affected with irritation, it will manifest its sufferings by symptoms somewhat different. Nevertheless, there is, in all diseases of irritation, a family resemblance; characterized by certain symptoms common to all cases, by which they are, with facility, discovered to belong to the same class.

Now it requires no great experience to show, that the symptoms of malignant and common intermittents, are precisely the same as those of continued fevers, and of all local inflammations;

modified only by the nature and functions of the part affected. The only material difference is to be found in their periodicity, which we have already proved, cannot be offered as an objection to their being regarded as depending on irritation. It naturally follows then, that as their symptoms are similar, so the cause of these symptoms must likewise be of the same nature; and that these fevers must arise, like continued fever and other inflammatory diseases, from a local cause; for, agreeably to the true method of philosophising, it is unnecessary to seek for more causes than one to account for the same effect. Analogy proves, therefore, 1st, that intermittents are local diseases, with a general disturbance of the system; and 2nd, that this local disease *may* be an irritation, since there are a great number of local, external and internal, intermittent irritations.

It remains now to inquire whether this view of the subject will be sustained by an examination of the ordinary causes of intermittent fevers.

Causes.—The greater number of physicians, of the present day, agree in the opinion, that continued and remittent fevers—the essential and primitive fevers of authors, depend on an organic derangement of some portion of the body. Admitting this to be true, and we are disposed to think it would be difficult to prove it not to be so, every one must have seen cases of what are called continued fevers, become remittent, and these latter change to the intermittent type. The reverse of this has also often been noticed, and has but too frequently been the result of the injudicious and untimely use of stimuli. Intermittents offering but few signs of local irritation, have sometimes changed, without the supervention of any new cause, and by the sole effect of a metastasis, into an evident inflammation of some vital organ. From all these facts, we are naturally led to the conclusion, that all these diseases are of the same nature, or rather that their proximate cause is the same; since it is revolting to imagine that diseases of one nature can change, so rapidly, into another of a different kind. The former depending, therefore, on a local lesion, the latter must also arise from a similar cause. Independently of this, all the predisponent and exciting causes of intermittents will be found to be the same as those of remittent and continued fevers, and of local irritations in general. They all irritate directly or indirectly, the tissues and organs of the body. Let us examine a few of them in detail.

Among the *circumfusa*, we find sudden and great atmospherical vicissitudes,—dampness of the air—exhalations from animal and vegetable substances in a state of putrefaction, and certain gases, produced during chemical processes.

2. Among the *applicata*, we may enumerate damp clothes too long applied to the body—sleeping on the damp ground, or on any cold and damp substance—a shower of rain—a cold bath.

3. Among the *gesta*, sudden changes from exercise to repose—excessive fatigue of body and mind, more particularly at night.

4. Among the *percepta*, are powerful emotions of the mind, especially fear, terror, grief—or the reverse passions, anger, hatred, &c.

5. Among the *ingesta*, irregularity in regimen—too great an indulgence in fermented or alcoholic liquors, spices—aliments of bad quality—unripe fruits—worms, &c.

6. Among the *excreta*, we find derangements in habitual excretions, which are suppressed or in excess—suppression of perspiration, of an eruptive disease, of habitual hemorrhage, or of a drain, &c.

It would be no difficult task, to show, by a careful analysis of the modus operandi of these causes, that they all act by stimulating, directly or indirectly, some of the organs of our body; but as this would occupy too much of our time, we must content ourselves with calling attention to the fact that all these causes produce, in many instances, continued and remittent fevers, and local irritations in general; and that as it is an old axiom, that similar causes must produce similar effects, we are justified in concluding, that malignant and ordinary intermittent fevers arise from a local irritation. In addition to this, we would ask, on what other principle than the present, can we account for the fact, that strictures in the urethra, or the mere passage of a bougie, will occasion frequent and regular paroxysms of fever?

The elder FRANK relates a case of quartan fever caused by the irritation, on the gum, of a tooth which had not yet protruded. The fever, after resisting all remedies, disappeared when the tooth pierced its covering membrane.

By analyzing the symptoms of intermittent fevers, we readily discover, that they are precisely similar to those that accompany all local irritations. This is found to be the case, whether we examine the symptoms attending the first, second, or last stage.

The chill or even the cold creeping, constituting the first stage of an intermittent, is common to every local inflammation; and consequently cannot serve to establish any difference between these diseases. In local inflammations it is sometimes wanting; but there are few physicians who have not occasionally seen intermittents unushered with this symptom.

The increased action of the heart and arteries—the augmented temperature of the skin—the deranged state of the secretions—the altered condition of the intellectual faculties and most of the senses—the pains in the limbs, accompanying the second stage of an intermittent, are precisely such as attend the stage of re-action of every inflammation sufficiently violent to occasion a disturbance of the system. The only difference, therefore, between this stage in these two forms of disease, is to be found in the difference of those symptoms depending on the affection of particular parts.

The third or sweating stage of an intermittent resembles so much the same stage, or termination of most inflammations, that we must regard it as effected in the same way; namely, that it depends, in both cases, on the translation to the exhaling vessels of the skin, of an irritation which was seated internally.

The paroxysm of an intermittent fever differs, therefore, from that of an ordinary inflammation, attended or not with pain, only in the duration. But as mere *duration* never could constitute any difference in the *nature* of diseases, are we not justified in concluding, that if the symptoms we have enumerated, indicate in pleurisy, peritonitis, &c. the existence of a local irritation, they in like manner indicate the same affection in intermittents, though this irritation be not manifested to our senses, in all cases, by pain? But this is most clearly shown to be the case when we direct our attention, in a more particular manner, to the malignant intermittents, as we find the paroxysm of many of these attended with this symptom, (pain) which many physicians think essentially necessary to indicate inflammation. Let us take, for example, that modification of the disease, which, on account of its prominent symptom, ALIBERT has denominated the *Pleuro-pneumonic*. It must be evident to every one, that the dyspnœa, cough, bloody expectoration, pain in the side, hot skin, frequent and hard pulse, which characterize the paroxysms of this pretended essential fever, denote an inflammatory state of the pleura and parenchymatous structure of the lungs. If they be denied to arise from this condition of these parts, we are really at a loss to ascertain what they will be asserted to depend upon. During the first paroxysm, the most experienced and intelligent practitioner would be led to pronounce the patient affected with a pleuro-pneumonia; the symptoms being in no respect different from those of ordinary cases of that disease. Now if, as in the instance before us, these symptoms, after continuing a few hours, subside, and appear again after an interval of one, two, or three days, it is conclusive, that the disease can be nothing more nor less than a pleuro-pneumonia, assuming the intermittent type.

It is true, that ALIBERT, adopting the sentiment of SENAC, maintains that such local symptoms are very deceptive, and though resembling those of inflammation, do not depend on this affection. The only reason he adduces in favour of this opinion, is the short duration of these symptoms. If it be asked, what these symptoms depend upon? ALIBERT will tell you, that it is the intermittent fever which has thrown itself on the part, already predisposed by constitutional debility. But what is this fever? He will again say, that it is a lesion of the sensitive and motific systems. The deduction is clear. It is the being, called intermittent fever, depending on a lesion of the nervous power of the *whole* system, which has attacked, in the case before us, the respiratory organ, and has produced phenomena there, which, though similar to those of irritation and inflammation, do not depend upon these, but upon something very different from every thing else. An explanation truly philosophical, and as lucid as many doctrines of the present day.

GIANNINI referred these local symptoms, and indeed the hot stage of intermittents, to what he called a neurosthenic state—a compound of asthenia of the nerves and increased excitement of the arteries—a state very distinct from inflammation, and requiring a different treatment. Such a state, however, is the mere product of the imagination; for an excited state of the arteries, with debility of their nervous power, is revolting to every physiological physician.

Were a physician so sceptical as to demand further proofs, than those already offered, that the disease is of the nature contended for, it will only be necessary to refer him to the results of dissection; for he will then find traces of inflammation and its consequences, similar to those we notice after the continued, or rather remittent form of the same complaints. On this subject, an intelligent writer remarks, "the ontologists will say, that the disease was not an inflammation, but only a congestion. Admitting this to be the case, let them suffer the consequences of this hypothesis. A congestion is always a modification of the organic action of the part affected. Now, as this modification is allowed to be intermittent, we do not see why inflammation, which is another modification of the organic action, will be denied to be intermittent."—GOUPIL, 173. What we have here said on the subject of the *Pleuro-pneumonic*, will apply, with equal propriety, to the other forms of malignant intermittents, described by ALIBERT—as the cardialgic, hepatic, dysenteric, &c.

The displacement or metastasis of these fevers into external irritations, and the re-appearance of the former, when the latter subside or are repelled too suddenly, may be safely adduced as additional evidence in support of the views here maintained.* The writers of the 16th century, attributed all these changes to the translation from the interior to the exterior, or from one part of the body to another, of a morbific humour; and although reasoning on mere assumption, they were entitled to the credit of entertaining a unity of principle, not frequently met with in many physicians of this age; yet, in the present improved state of pathology, it is much more rational to insist, that the appearance of an external inflammation has arrested the progress of the intermittent irritation seated internally; for experience has shown, pretty conclusively, that a disease arrested by an irritation, must also be regarded as itself depending on an irritation. Were this proposition denied, we know of no theory likely to explain, satisfactorily, this translation of disease; and in preference to adopting any hitherto proposed, we would retrograde, though with reluctance, to the theories of coction and concoction.

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* Such cases have been noticed by BARTHOLIN, JUNCKER, STRACK, GHISI, DUMAS, PINEL, &c. and are, therefore, proved beyond doubt. Nor are these the only instances of a well known irritation alternating with an intermittent fever. Dysentery, diarrhœa, and pulmonary catarrh. have been seen to arrest the progress of the fever, by SYDENHAM, GRANT, LORRY, RÆDERER, WAGLER; and MORTON saw many cases of this fever which were removed by the appearance of rheumatism and gout. BANG, on the contrary, saw intermittent fever put a stop to chronic catarrh, pain in the side, and even incipient phthisis. CARRON saw it remove erysipelas: a case is mentioned by MONGELLAZ, in which the fever alternated with itch; and other cases of this kind might be cited from the writings of numerous authors of the greatest respectability.

The majority of authors who have written on intermittent fevers, have placed their seat in the organs in which they discover lesions after death; and it is a fact well authenticated, that these lesions have always been found to be the effects of inflammation. In the description of an epidemic of intermittents, described by LANCISI, we find that dissections revealed evident signs of inflammation, and its consequences, in the abdomen. Dr. BAILLY, in his account of the intermittent fevers which he noticed in Rome,* tells us, that they were all characterized by the predominant affection of one organ. After death, marks of disease were invariably found, corresponding with the symptoms which had been manifested during life. It is true, that dissections have not, in every case, revealed these appearances; and this circumstance has been adduced, by the opponents of this doctrine, as militating against its correctness. In the greater number of cases, however, such lesions have been found, and this circumstance should, of itself, be sufficient to carry conviction to the most prejudiced mind. It is a fact, besides, admitted by almost every pathologist, that in diseases which we know to have depended on inflammation, we sometimes discover no traces of this morbid state on dissection, as the sceptic will learn in the writings of TISSOT, MORGAGNI, BICHAT, PORTAL, PINEL, BROUSSAIS, not to mention other names. There is another cause, however, which has prevented physicians from attaining a true knowledge of the nature and seat of such diseases; which is, that even in the worst cases, recovery takes place, under a judicious treatment; or death occurs ordinarily during a state of collapse, before re-action has occurred in the system. Nor should we overlook a reason mentioned by ALIBERT, who remarks, that when a physician loses a patient with such a disease, he does not feel much inclined to dissect him, for fear of discovering, in his organs, some unanswerable proof of the erroneousness of his practice. CHOMEL, (memoires sur les fievres essentielles) and some other physicians of the anti-physiological school, finding it impossible to deny the existence of marks of inflammation after death, confess that between these, and the symptoms observed during life, there is an evident *relation*. But what is this relation? Is this inflammation a cause or an effect of the symptoms? Many are disposed to regard it as the effect. But we are disposed to adopt the sentiment of those who consider it as the cause. 1. Because some of these lesions have evidently existed before the fever; or else they were chronic, and when by some cause or other they have become acute, fever has appeared. 2. Because there is, in general, an evident relation between the intensity of the inflammation and that of the symptoms. 3. Because the local disease being in some cases slight, does not affect the system; but becoming, from some cause or other, aggravated, fever succeeds and continues until the local lesion has been removed, or so far diminished, as no longer to affect the system. 4. Because, agreeably to the sentiment of the older authors, these fevers have been produced by acrid, bilious, or other matters which irritate the first passages; occasioning inflammation and disorganization. Now, in order that these matters should exist, those organs which secrete them, must have been in a state of excitement—consequently, fever, which, agreeably to these authors, existed only after the acrid matter had stimulated the parts, was not the cause of the excitement producing these acrid secretions; therefore, the present view derives support from the early writers, who, though bad theorists, were close observers. 5. Fevers cannot be the cause of inflammation, ulceration, excoriation; for if we analyse the symptoms of these fevers, we find that not one can produce such effects. This has been particularly pointed out by Dr. ROCHE. Some physicians, aware of the absurd consequences to which such a doctrine would lead them, have adopted the idea that the inflammations, noticed after death, were mere accidental complications. That such may be the case, in some instances, no one can deny; for every physician will easily comprehend, that during the progress of an intermittent irritation, seated in one organ or tissue, another part of the body may, from its sympathetic connexion with the suffering organ, or some new cause, become affected. But in such cases, there always supervene symptoms indicating this new inflammatory complication; whereas, unless we admit that active inflammation may exist in vital organs, without revealing its existence by some symptoms, we must deny the correctness of the opinion we have just noticed; because, in the greatest majority of cases of intermittents, no symptoms, other than those of the fevers themselves, can be pointed out as indicative of this pretended complication. Besides, admitting this to be the case, it would be difficult to discover why this complication should, in the great majority of intermittents, occur in the same part; which we shall presently endeavour to prove to be the fact.

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* Archives, vol. 4, p. 215.

Those who deny that intermittent fevers depend on a local irritation, have adduced in support of their views, the efficacy of Peruvian bark, and of tonics and stimuli in general. Thus it appears to them inexplicable, that remedies of this class, whose effects are to exalt the organic movements of a part, or of the whole system, should be applied advantageously to the treatment of diseases, depending already on an undue increase of these organic movements. But we must repeat here, what we have already said in a former part of this essay, that the mere circumstance of not understanding how, and why, a thing occurs, is not a sufficient reason for denying its existence. That they cannot account for the phenomenon in question, we are ready to admit; nor do we think it more probable, that in the present state of our knowledge, respecting the modus operandi of medicines, any one can pretend to give a satisfactory explanation of it. These physicians should bear in mind, that the nature of a disease, and its treatment, by means of a particular class of remedies, are two different and distinct questions. The one not necessarily implying the other. They are merely facts which we must treasure up, without inquiring whether or not they appear to contradict each other. Besides, the cure of irritations and inflammations by tonics and stimuli is not of very recent origin; and it is very probable that there exist but few physicians, who have not occasionally seen these remedies employed, in such cases, with the most decided success; even when they have applied them to the part affected. The cure of burns, by spirits of turpentine; of gonorrhœa, by stimulating injections—of conjunctivitis, by astringent applications, and of erysipelas, by blisters, are sufficient and familiar examples of the benefits of this class of agents, in the treatment of irritations.

These observations apply, with propriety, to the cure of intermittents, by tonics and stimuli. We are all aware, that such remedies remove these diseases; but we do not know in what manner they effect this desirable object. But those who oppose the opinion we here endeavour to hold up, should particularly bear in mind, that tonics and stimuli, when used during the paroxysm of an intermittent, uniformly aggravate the symptoms, except in very few and rare cases, in which the stomach and bowels are not implicated; and that they are only beneficial, when employed during a complete apyrexia, and the absence of all gastric irritation. These remedies do not *cure* the disease therefore, but only prevent its return.

Having shown, in the preceding pages, that intermittent fevers depend on a local irritation, we are naturally led to the examination of another question, which must be allowed to be of the utmost importance, in a practical point of view. We allude to the *seat* of that irritation which gives rise to the symptoms of the common periodical fevers of authors. By many physicians, they were regarded as differing widely from fevers of another type; but as early as the first edition of his Nosographie Philosophique, Pinel classed them with continued and remittent fevers, regarding them as of the same nature as these, and differing only in respect to type. This was a most judicious idea, and we are now sometimes at a loss to account for the fact, that physicians could have entertained a different sentiment. On this point, therefore, Pinel rendered a great service to the science, and is entitled to great credit for it. It resulted, then, as a natural consequence from the preceding view on this subject, that as soon as the continued and remittent fevers were shown to depend on an inflammatory irritation of the mucous coat of the stomach and bowels, intermittents would also be found to arise from a similar cause. The phenomena of their periodicity are not a sufficient argument against this hypothesis, since we have shown that periodical fevers depend on local irritation. Hence, after considerable experience and long reflection, Broussais advanced the opinion, that intermittent fevers are cases of periodical gastro-enteritis, but that the brain and other viscera are sympathetically irritated in the same manner as in continued fevers, and may also become the principal seat of irritation and inflammation, either periodical or continued.* (Prop. 222.)

But independently of the reason, for regarding intermittent fevers as cases of gastro-enteritis, derived from their analogy to continued fevers, we shall find the opinion fully sustained by an examination of the causes of these fevers,—by an analysis of their symptoms,—as well as by a reference to the opinion of authors who have almost unanimously, though unconsciously, placed their seat in the alimentary canal. This opinion will be still more satisfactorily proved by referring to the effects of the treatment, and to the results of dissection.

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* It must not be imagined, however, that we consider **Broussais** as the first to proclaim that the intermittent fevers of nosologists, depend on irritation of the stomach and bowels. We are perfectly aware that by F. **Hoffman**, quotidian, tertian, bilious, choleric, and low pestilential fevers, as well as the fever of Hungary, and typhus, were referred to an inflammation of the lining membrane of the alimentary canal, and more particularly, of the curvature of the duodenum. By **Casimir Medicus** nearly the same opinion was held, in relation to intermittents. **Pinel** also must be regarded as admitting unconsciously a similar theory, of at least some of these fevers; for regarding bilious and nervous fevers, which, however, he classed among his *essential diseases*, as depending on gastric and intestinal irritation, and holding that intermittents do not differ from the continued fevers, it naturally follows, that although he does not express it in decided terms, he admitted the gastro-enteritic nature of the former. Granting all this, however, we are not sure that **Broussais** is the less entitled to credit for his researches into the pathology of intermittents—1st, because we are not aware that any one before him proved so satisfactorily, that inflammation may assume the intermittent type; 2nd, because the theories of **Hoffman** and **Medicus** were entirely neglected, and the indirect testimony of **Pinel** either overlooked or warmly opposed; and 3d, because he has developed the theory through all its ramifications, and in a more satisfactory manner than any of his predecessors.

Not long after **Broussais** had offered his opinion respecting the nature and seat of intermittents, many physicians, admitting that these depended on local irritation, endeavoured to prove that this irritation should not be regarded as invariably located in the gastro-enteritic system. Thus Dr. **Jourdain** attempted to prove that the kidneys were in the greater majority of cases the seat of the disease, and the gastric system seldom primarily affected. Dr. **Audouard** imagined that he had solved the problem, and boldly asserted, that the spleen was the part principally affected; and Dr. **Rayer** (Dictionnaire de Medicine, tome 12) after endeavouring to refute the sentiments of **Broussais**, maintains, that the intermittent irritation, giving rise to the fever in question, is seated in some part of the cerebro-spinal system; and that the gastric and intestinal disease should be viewed only as an accidental complication.

The greater number of causes assigned by authors as capable of producing intermittent fevers, act by stimulating the stomach and bowels, either directly or indirectly. Having, in a preceding part of this essay, enumerated these causes, it is unnecessary to repeat them here. Bartholin, Forestus, Pollini, Roederer, and many other writers, have witnessed cases of intermittent fevers occasioned by the irritation of worms. Frank relates from Semack a case of the disease occasioned by swallowing a piece of lard. It resisted, for a long time, the use of bark, and gave way as soon as the lard was expelled from the stomach.

Frank himself knew of a similar case occasioned by a piece of mushroom; and not many years ago, a case was noticed by the writer of this article, in which five or six paroxysms of the fever were occasioned by the irritation produced, on the mucous surface of the intestines, by a peach stone. Now, it might be inquired of the defenders of essential fevers, whether these substances could bring on one of these fevers, and in what manner this was effected? As regards ourselves, until these questions be answered satisfactorily, we shall continue firm in the belief, that the fever in these cases, could only be the effect of a local irritation of the alimentary canal, occasioned by the above mentioned substances.

In respect to the symptoms of intermittent fevers, it will only be necessary to remark, that the thirst, redness of the tongue, aversion to warm stimulating, and the pleasure derived from cooling drinks,—the loss of appetite, nausea, vomiting, and pain in the stomach, which accompany the paroxysms of almost every case of intermittent fever, sufficiently indicate, that the stomach and bowels are in a state of irritation. If this position be denied, we are at a loss to understand to what organic change these symptoms will be referred. It is true, that all these signs do not appear in every case, and that in some instances they are even *all* wanting. But there generally exist a sufficient number of them to indicate the irritation of the mucous membrane of the organs already mentioned—and their absence only occurs in a small number of cases, and clearly points out, that these organs are not affected. In these latter cases, besides, symptoms which show that some other part is irritated, are always present; from which it results that they cannot be offered in opposition to the present doctrine.

We have said that the greater number of physicians have placed the seat of intermittent fevers in the digestive organs; this assertion could be proved to be well founded, by a reference to the works of the Father of medicine, of DIOCLES, GALEN, CELSUS, FERNELIUS, BALLONIUS, BARTHOLIN, STALH, and of almost every other author, down to TISSOT, and the latest pathologists. It is true that most of these writers referred their seat there in a very vague manner, and involved this opinion, founded on close observation, in all the jargon of the times in which they successively flourished—talking, at one period, of the influence of pituitous matter; at another, of acrid humours. But it is nevertheless true, that by abstracting from our mind this vile nonsense, we easily perceive that by the spirit of observation, which prevailed formerly and has given way to metaphysical speculation on essences, the early writers were led to discover the influence of gastro-enteritic irritations in the production of intermittents.

As respects the proof derived from the treatment, it must be remarked, that antiphlogistics are, and have always been, regarded as the most appropriate remedies; and that the nearer they are applied to the part affected, the greater is the benefit derived from their use. This is not mere speculation, as may be found by any one who will take the trouble of testing the practice himself, or perusing, without prejudice, the Medical Journals which issue monthly from the European presses. In these he will find that not a few cases are on record, in which the symptoms have given way to leeches applied to the epigastrium, or abdomen, without the necessity, in all cases, of recurring to bark. We all know, besides, that this remedy, when administered during the paroxysm, or even during an incomplete apyrexia, when some of the symptoms we have enumerated above continue, produces, usually, the greatest mischief. It is only serviceable when all signs of gastric and intestinal irritation have been removed by antiphlogistics. The practice of giving emetics and cathartics, cannot be adduced against this present theory. 1st, Because these remedies are more effectually employed during the apyrexia. 2nd, Because those who administer them during the fever, experience, generally, more relapses than others. Besides, the revulsion to the emunctories produced by emetics, and the fluids evacuated by purgative substances, do away, in a great measure, the danger that would attend the exhibition of a mere irritant.

The results of dissections may also be brought forward in proof of the doctrine we have here endeavoured to support; for in examining the reports of **Bonetus**, **Lieutaud**, **Spigelius**, **Ballonius**, **Fernelius**, **Lancisi**, **Morgagni**, **Hoffman**, **De Haen**, and of almost every ancient or modern writer who has dissected individuals carried off by intermittents, we discover that they have, in almost every instance, found in the stomach, intestines, or annexed organs, traces of inflammation or its consequences.

Before leaving this part of our subject, however, we must repeat that as a continued fever may arise from the irritation of any organ of the human body, so an intermittent fever may also depend on the irritation of any other organ. But in the majority of even these cases, the mucous membrane of the stomach and bowels becomes affected. When it does not, the absence of this irritation may easily be inferred from that of some or all of the symptoms we have enumerated as indicating gastro-enteritic irritation.

In bringing this article to a close, we beg leave to remark, that whether this doctrine of intermittent diseases be admitted or not by the generality of our readers, it does not appear to us so unphilosophical and *dangerous* as some, who do not understand it, and have never taken the trouble to study the doctrine of **Broussais**, are in the habit of publicly pronouncing it to be. The proper end of every theory is to lead to a correct and safe practice. Now we must insist, notwithstanding bold and groundless assertions to the contrary, that by adopting the views of our author, we shall be able to treat our patients better, and more to their comfort. The object in an intermittent fever is to get a perfect apyrexia, which cannot be better accomplished than by the antiphlogistic plan. But we must remark to those who are so readily alarmed at the mere mention of inflammation and antiphlogistics, that it does not follow, because a disease depends on inflammation, that we must bleed by gallons. So far from this, it could be shown to them that most intermittents, although depending on this condition of the organs, may be, and are often, cured by mild antiphlogistics during the fever, and tonics during a complete apyrexia.

ARTICLE XI.—*Anatomie Pathologique. Dernier cours de* XAVIER BICHAT, *d' apres un manuscrit autographe, de* P. A. BECLARD; *avec une notice sur la vie et les travaux de* BICHAT, par F. G. BOISSEAU, membre des Acad. &c. A. Paris, 1825.

THE principal interest which will be felt in this work, will arise from viewing it as a relic of the illustrious genius whose name it bears; as well as of the more recent, but highly distinguished hand that copied it.

Newer, and more improved, as well as more extended works have arisen on the same subject; and at a time, when the light of science rests with such peculiar effulgence upon the arcana of morbid anatomy, as it does at the present day, it is of little moment to analyse the book before us. It is a highly abridged outline of morbid anatomy, arranged according to the anatomical systems of BICHAT, which have formed, since his death, the foundation of most of the modern French doctrines. It is, in fact, little more than an extension of the last section of each chapter of the *Anatomie Générale.*

Somebody has said, we believe in the Edinburgh Review, that every new book should contain, at least, one new idea, amplified, explained, and illustrated as the author pleases, but at least, having novelty for its basis. Something like this may be traced in the life and writings of BICHAT. Led, most probably in search of originality, to write a treatise on the membranes, he caught, what the French impressively call, *une idee mere*, or what in our own tongue, by a somewhat similar figure, is termed *a pregnant idea.* He observed, that not only was the human body divided into complex organs, but that the materials of which these were composed, were extended more or less generally throughout the body, entering into the composition of its various parts, but preserving a very great similarity, and in many cases, an identity of appearance, structure, office, vital and mechanical properties, and diseases. What he first observed of the mucous and serous membranes, he soon applied to the whole system; and thus arose the interesting fabric of his new Science of General Anatomy.

This thought was, indeed, the parent of many others; "the fruitful mother of a hundred more."

In studying the various applications of this principle, BICHAT was led to unravel the animal economy, in a mode entirely different from any which had been practised before. Mr. Charles Bell has complained, that he does not so much give us new facts, as "hold up old ones by the wrong end." The self-satisfaction which this dictum evinces, will probably be offended by beholding the many very important results which have arisen from this "new manner of viewing these subjects." First, modern writers have been led to make many new and important, though frequently minute, observations on the vital properties of different parts of the body; many of which remarks have since proved of practical utility in medicine. Again, it was particularly found that parts of similar structure, possessed a very considerable similarity in many of their diseases; and, in numerous instances, sympathized with each other so far, that the existence of morbid action in one part, was peculiarly liable to reproduce it in another. Perhaps, however, the benefit of Bichat's mode of analysis, was nowhere so conspicuous, as in the *membranes*, the point at which he began. In the discovery that it was not only possible, but a thing of very frequent occurrence, for one of the two surfaces of a hollow viscus, such as the stomach, to be affected with disease, while the other remained uninjured, he opened to his successors a wide door for future investigations and triumphs. To this principle we owe a large portion of the researches which Laennec and Broussais, and the whole host of less celebrated names of the Parisian school, have since laid before the public. We do not now stop to enumerate any of the relations possessed by the arrangement of our illustrious authors with the discoveries and opinion of subsequent times. They are to be found expressed, or taken for granted, in all the works on pathology or morbid anatomy, with which we are now supplied. Hence it is that the name of Bichat has become "familiar in our mouths, as household words;" and is frequently pronounced in situations where his works have never penetrated.

The illustrious author of the remnant before us, published a posthumous volume of the Surgical Journal of the great Desault; delivered lectures on anatomy, physiology, diseases of the bones, and surgical operations; published the surgical works of Desault; founded the Medical Society of Emulation; wrote essays for their transactions, enriched with many original observations in anatomy; wrote his Treatise on the Membranes, the Researches into Life and Death, and the Anatomie Generale; opened an immense number of bodies, and delivered courses of morbid anatomy, designed to afford a basis for an invariable classification of diseases. And all this was done before his early death, at thirty years of age. To use the language of CORVISART, "there is no one who, in so little time, has done so much and done it so well."

The copy, from which the work before us was printed, was found among the manuscript papers of BECLARD, of whose death we have heard, within the last year. It is said to have been copied out by the eminent owner, in his own hand writing; but is dated at a period when BECLARD was not attending the lectures. It is thus not brought forward under the responsibility of the last named teacher; but appears to have been obtained by him from some one on whose fidelity he thought he could rely. It is a set of notes, of a very brief description, of the last course which the great author ever delivered. It is of course, though a little polished by the editor, M. BOISSEAU, still in a very imperfect condition, and would probably not have been presented to the press, but for the renown of its author. At the same time, it is proper to remark, that it is about as copious as the work of Dr. BAILLIE, which is acknowledged to be the best we have in our own language, except translations.

Our author begins by dividing diseases into *general* and *local*; including among the former the greater number of fevers. These, he tells us, consist in a general disturbance of the system, in most cases, without leaving any injury of a particular organ visible after death. Hence he derives the uncertainty of our knowledge upon these diseases. This, then, fixes the date of the present doctrine, that fever is a *gastro-enteritis*. We find, however, and we presume that this is what gave the first hint to BROUSSAIS, that *embarras gastrique*, which we suppose may be translated "foulness of the stomach," or "biliousness," is set down by our author, without hesitation, as a mucous inflammation, a true catarrh of the stomach. As the modern writers acknowledge their obligations to BICHAT, it is highly probable that this is the finger-post which directed them their way. Like COLUMBUS, when he had reached America, his time and his life were not long enough to explore the whole extent of the world he had discovered. He made known the *islands*, the continent was left for Broussais.

After some general remarks upon opening bodies, and upon the mode of studying the subject, we have, first a chapter upon the alterations of the fluids,—rather meagre we must confess. Then follow diseases of the serous membranes. The subjects enumerated, are inflammation of the serous membranes, acute and chronic, miliary eruptions on them, spots and ossifications, and sympathetic affections, and then an account of the diseased appearances of the different membranes, successively considered. On arachnoid inflammation there is little said. Next are diseases of the mucous membrane; considering, first, inflammation, hemorrhage, aphthæ and fungus, and then the particular membranes and their parts. We have already adverted to mucous inflammation of the stomach. Next comes the cellular tissue; next the lungs. The necessity of introducing the last named viscus altogether, although to the interruption of the regular series of tissues, is felt and acknowledged. Whether this or some other circumstance be the cause, we cannot tell; but the diseases of the lungs are crowded into twenty-two pages. M. Laennec has since shown that the application of Bichat's doctrines to these organs, well deserved a more ample extension.

We next have diseases of the glands, with an enumeration; then those of the skin, including burns; then of the muscles of organic life; then of those of animal life; of the arterial, venous and nervous systems; the latter also, occupying just twenty-two pages; of the absorbent, fibrous, synovial, cartilaginous, medullary, bony, hairy, and epidermoid tissues. Such is the outline of this set of notes of Bichat's last and fullest course of lectures on morbid anatomy. We do not know that the work is well adapted to be republished in the United States; as it has proved the basis of an immense superstructure. But of what kind were the materials for that erection, will always be matter of the deepest interest to all who watch the progress of the human mind, and all who apply its labours, with reflection, to the practice of medicine.

ARTICLE XII.—*An Attempt to Establish the First Principles of Chemistry by Experiment.*—By THOMAS THOMSON, M. D., Regius Professor of Chemistry in the University of Glasgow. F. R. S. London and Edinburgh, &c. &c. Two volumes.—London, 1825; pp. 1010.

The work, of which we propose to give an analysis in the present article, is principally occupied in experimental researches, with a view to determine, with greater accuracy than has hitherto been attained, the combining ratios of chemical substances. Ever since it had been shown, that the weights, in which bodies combine in the lowest terms, are *reciprocating* ratios, chemists have been intent to affix to each simple and compound substance, its combining number; that is, a number expressive of its ratio of combination with all other substances, taking these also at their combining numbers. In the progress of the inquiry, the curious observation was made by Dr. Prout, which appears to hold in a majority of instances, that all the larger combining numbers are multiples by a whole number of the smallest.

It can hardly be necessary to inform the reader, that, on this general fact of the reciprocity of combining ratios, where different substances are concerned, and on the multiple property of the successive proportions, in which one substance is sometimes found capable of combining with another,—the beautiful and important theory of atomic combination is founded. A large portion of the chemists of the present day, adopting this theory, consider the combining numbers as representing the relative weights of the integrant particles of the bodies, to which they belong, and hence call them the weights of their atoms respectively. Other chemists, however, equally satisfied with the atomic theory, as an hypothesis connecting all the observed facts of combination, prefer to call the combining numbers, *equivalent numbers*, *proportionals*, *representative numbers*, &c.

Prior to the appearance of the work before us, the atomic numbers, or chemical equivalents of a great number of simple and compound bodies had been determined with every appearance of accuracy. The reciprocating property of the numbers being fully understood, the analytic chemist availed himself of it, to determine, with almost unerring certainty, the correctness of his analyses. When the atomic number, obtained for any substance investigated, proved to be the same, as deduced from its combinations with the best known substances, confidence was reposed in its correctness; when different numbers were brought out, the experimentalist was certain that some error had crept into his results.

In addition to the light, shed on analytic chemistry generally by the facts above stated, the analysis of aëriform substances became greatly facilitated, in consequence of some important observations, made by Gay-Lussac in 1809, on the ratios of the bulks or volumes in which gaseous matter combines. This great chemist proved, that in all the instances of gaseous combination, examined by him, the ratio is a very simple one; that, for the most part, one volume of one gas combines either with one volume, with two volumes, or with half a volume of another gas. He also showed, what indeed might have been deduced as a corollary from multiple proportions by weight, that, where the same gas enters into combination in several proportions with another gas, the volumes representing the higher proportions are multiples, by a whole number, of the volume representing the lowest.

Since the *combining weights*, or *atomic numbers* are reciprocating ratios, it is easy to perceive, that the ratios by volume, or *combining volumes*, become necessarily reciprocating ratios also. But it by no means follows, from the multiple property of the atomic numbers amongst themselves, that the numbers representing *combining volumes* should likewise possess that property. These latter numbers, however, as an independent fact, do possess it; but they differ from the atomic numbers in being very few, in consequence of the same numerical expression denoting the combining volume of many gases at the same time.

There being, therefore, a series of equivalent numbers for the gases, expressive of *combining volumes*, and another series expressive of their *combining weights*, it is evident, that the two series must be equivalent to each other, as representing the *same* quantities of the various gases, considered severally under the two relations of bulk and weight. The series of numbers representing combining volumes being well made out, by the aid of the law of Gay-Lussac, which proved the simplicity and multiple character of the ratios, it became comparatively easy to analyse the gases, by *measuring* their constituents, and converting the numbers by bulk, into the correspondent numbers by weight.

The laws of combination both by weight and volume being so fully developed before the present work appeared, it is easy to perceive, that Dr. THOMSON came to the task, which he has imposed upon himself, of ascertaining with greater precision the combining ratios of bodies, with the leading principles connected with the subject, already determined by the labours of cotemporary chemists.

The work before us commences with an historical introduction, in which the successive labours of chemists, which resulted in the establishment of the present theory of chemical proportions, appear to be concisely and fairly stated. In it, Dr. THOMSON speaks with proper emphasis of the important observation, first made by WENZEL in 1777, that neutral salts preserve their neutrality after mutually decomposing each other; the reason of which is now known to be, the reciprocating property of the combining ratios. The same fact was enunciated in another form by WENZEL, when he stated, that whatever series of numbers represents the quantities, in which the alkalies combine with any particular acid, numbers having the same ratios, represent the combining quantities of the same alkalies with all other acids.

We mention the observations of WENZEL thus particularly; because it would appear, that Dr. THOMSON has availed himself, in his analytic researches, to a very considerable extent, of the general fact of neutrality after double decomposition. So far as we know, Dr. THOMSON is the only chemist that has made extensive use of this principle, in testing the accuracy of analyses, or, to speak more specifically, of equivalent numbers. If, for example, the equivalent numbers of two salts, which mutually decompose each other with precipitation, have been determined by independent analyses; then, upon mixing them in a state of solution, in equivalent quantities, the accuracy of such numbers is put to a very delicate test. If the numbers be accurate, neither ingredient of the precipitate will be found in solution; if inaccurate, the supernatant liquid will contain one or other constituent of it. Now as many precipitable substances may be detected to the 100,000th part of the solution in which they are held, this method of proof, so ingeniously applied by Dr. THOMSON, furnishes the means of detecting the most minute inaccuracy.

In respect to the combining ratios, a subject arises incidentally, which is noticed by Dr. THOMSON; namely, what are the best numbers in which to express them. Two sets of numbers are in use; one set deduced from oxygen as unity; the other, from hydrogen. Dr. THOMSON declares in favour of the former scale of numbers, and gives several reasons for his preference; while he objects to the hydrogen unit on several grounds. In the first place, he conceives, that, as the atomic weight of hydrogen is difficult to determine, it is improper to make it the basis of the ratios; since any alteration in it from future experiments will change the numbers of all other bodies. Thus, it is stated, that, by BERZELIUS, the quantity of hydrogen, combining with oxygen to form water, is supposed to comprise two atoms; while, by the great majority of chemists, the same quantity is considered to represent one atom. It is, therefore, contended by Dr. THOMSON, that, as two values are thus given to hydrogen, should the value adopted prove erroneous, the substitution of the other will cause a proportional alteration in the atomic numbers for all other bodies. In reply to this we say, that the experimental ratio between oxygen and hydrogen may be considered as definitively settled, and that the difficulty mentioned by Dr. THOMSON can only grow out of the different modes of viewing the atomic combination of these elements by different chemists. The atomic view, taken by all chemists, except BERZELIUS and Sir H. DAVY, respecting the composition of water, is, that the experimental ratio represents a single atom of each of its constituents. Now, on this reasonable assumption, hydrogen being called 1, oxygen becomes 8; but should BERZELIUS's view, that the combining quantity of the hydrogen comprises two atoms, be finally rendered most probable, it by no means follows, that any necessity would exist to unsettle all our numbers, by doubling them, in order to make the actual unit consonant with the new supposition. All that would be necessary in such an event, would be to say, that unity represented the weight of two atoms of hydrogen.

If the argument of the discrepant opinions respecting the atomic weight of hydrogen, be any objection to the hydrogen unit, the same argument may be urged against the oxygen scale of numbers. For Dr. Thomson, at page 464, Vol. II. when he wishes to obviate the anomaly of half an atom of oxygen, supposes the possibility, that the combining weight of oxygen, at present considered to denote one atom, may really represent two atoms; and no kind of objection can be made to our statement, that the hydrogen numbers need not be disturbed; since, under precisely similar circumstances in relation to oxygen, Dr. Thomson insists, that the oxygen scale of numbers requires no alteration. His words are, "This supposition, [that the atom of oxygen may weigh but half its present number] if admitted, will make no alteration in the atomic weights given in this work; it will only alter our way of viewing them, and 1, instead of denoting the weight of 1 atom of oxygen, will represent 2 atoms."

Dr. Thomson further objects to the hydrogen unit; because this element unites with comparatively few bodies, while oxygen possesses the most extensive powers of combination. This being the case, Dr. Thomson remarks, that the advantage of the simple arithmetical process of adding unity, is much more extensively enjoyed by the adoption of the unit for oxygen than for hydrogen. But can this be considered a strong argument in favour of the position of our author? On the hydrogen unit, oxygen becomes 8; and here the arithmetical process consists in merely adding 8 for every atom of oxygen in an oxide. Is there then so much difference in facility between the addition of unity, and of so small a number as 8?

Dr. Thomson further alleges, in support of his preference of the oxygen unit, that the ratios, expressed by small numbers, are much more easily observed than those denoted by large ones. In proof of this, he alleges, that the ratio of 38741 to 116223 is not apparent at a glance, though it is the same as 1 to 3. In answer to this, we reply, that the position is only true under certain limitations. If the smaller numbers are expressed by the aid of a greater number of figures than the larger, it certainly cannot hold. Thus the ratio of .125 to 1, on the oxygen unit, is not so easily perceived as that of 1 to 8 on the hydrogen scale. Neither is the ratio of the oxygen numbers for chlorine and muriatic acid, namely, 4.5 and 4.625, so readily observed, as the ratio of the hydrogen numbers, 36 and 37. So that whenever decimals occur, especially when they extend to several places, as they frequently do on the oxygen scale of numbers, this argument of Dr. THOMSON, in favour of the oxygen unit, so far from being in point, proves the greater advantage of the hydrogen numbers.

At page 16, Vol. I. Dr. THOMSON remarks, that "it is highly important in chemistry, that the atomic weights of bodies should be represented by the smallest possible numbers." To show that this proposition is too broadly expressed, we would ask, what would be the effect of assuming unity to express the atom of uranium, that simple body, which has the highest atomic weight. By doing so, all the numbers on the oxygen scale would be rendered 26 times less; but would any one contend, that this alteration, making all the atomic numbers, except one, less than unity and therefore fractional, would be an improvement?

The great advantage of the hydrogen unit is, that we get whole numbers to express all the atomic weights. This depends upon the general fact, already adverted to, and which is fully admitted by Dr. THOMSON, that all the higher atomic weights are multiples by a whole number of the smallest, or that of hydrogen. Now, on the oxygen unit, a large proportion of simple and compound bodies become necessarily represented by a fractional number. Notwithstanding the obvious superiority of the former numbers, on the single ground of the absence of fractions, Dr. THOMSON cannot see, that the decimals are so great a disadvantage on the oxygen scale, as the greater size of the hydrogen numbers, on the hydrogen scale. This opinion is predicated on the fewness of the fractions, they being "either 0.25, 0.5, or 0.75, *except* in four or five cases, when the fraction is 0.125, 0.375, or 0.625;" and on the alleged fact, that nearly half the numbers on the oxygen scale are whole numbers, and consequently combine this advantage with that of being of smaller size.

Speaking of the division of sentiment amongst chemists on the subject of the oxygen and hydrogen scales of atomic numbers, Dr. THOMSON remarks, that "Mr. DALTON made choice of the atom of hydrogen for his unity. And in this he has been followed by Dr. HENRY, of Manchester, and by *one or two chemical gentlemen in London*. But this method has been *rejected* by almost all the British chemists, and by all the chemists, *without exception*, in Europe and America." Vol. I. p. 14. This statement is very inaccurate. We have in favour of the hydrogen scale, Mr. Dalton, Dr. Henry, and Dr. Ure, and the "one or two chemical gentlemen in London," comprising Sir H. Davy, Mr. Brande, Mr. Phillips, Mr. Children, and Dr. Paris, not to mention others. In America, so far from the hydrogen unit being *universally rejected*, all the writers that have alluded to the subject have given it the preference.[*] It is true, that the writers on the continent of Europe adopt the oxygen unit; but, amongst them, that principle is not recognised, which renders the hydrogen unit so much more convenient; namely, the multiple property of the combining numbers. Hence it follows, that the numbers used on the continent, if raised to the hydrogen scale, would have the disadvantage of being larger, without being simplified by the disappearance of fractions.

We have already alluded to the simple laws of combination, applicable to gaseous bodies, when viewed in the relation of bulks or volumes, and shown, in a cursory manner, how a series of numbers, expressive of the volumes, which gases affect in combination, may be converted into a correspondent series, representing weights. Considering that the combining volumes of gases are reciprocating ratios, it would appear surprising, that no one has insisted on the expediency of *fixed* numerical expressions to denote them. If ratios of combination by weight are, by common consent, expressed in constant numbers, made up in reference to a series, conventionally adopted, and if great advantages are found to result from this practice, can it be doubted that similar advantages would flow from its adoption for combining volumes. Nevertheless, the great majority of chemists are content to express ratios in volume, by means of numbers, independent of any series; whereby the equivalent or reciprocating property of the volumes is rendered less apparent, and much perplexity often created.

If it be conceded, then, that we ought to have numbers, denoting equivalent volumes, the next question is, in what numbers shall the ascertained ratios be expressed? The ratios are very limited, being all denoted by the numbers 1, 2 and 4.[*] The ratio expressed by the middle number, denotes incomparably the greater number of gases, including all the simple gases, except oxygen. This ratio, therefore, ought evidently to be represented by unity; thus throwing the advantage of the simplest number, where it will be applicable to the greatest number of gases. Oxygen will then be denoted by $\frac{1}{2}$, and the few gases, which affect the highest ratio, will be represented by 2.

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[*] See "The Elements of Chemical Science," by John Gorham, M. D. Boston, 1819:—"A System of Chemistry for the use of Students of Medicine,"—By Franklin Bache, M. D. Philadelphia, 1819:—and Dr. Macneven's Edition of Brande's Manual of Chemistry, New York, 1821.

Dr. THOMSON appears to feel the importance of equivalents for volumes, and usually adopts the numbers here advocated; but he nowhere dwells on the advantages, derived from their use, or explains the general principles of combination, which demonstrate their utility. In some instances, however, he adopts independent ratios, not having reference to a series. Examples of this are to be found in various places in the work before us. Thus in Vol. I. p. 18, the composition in volume of the carbonates of ammonia is stated to be, one volume of carbonic acid, severally combined with one volume, and with two volumes of ammonia; instead of the equivalent volumes,—two volumes of ammonia, with one and two volumes of carbonic acid, stating the composition in the usual order. The same criticism applies to the manner of stating the combination of fluoboric acid with ammonia in several places. At page 51, water is given as consisting of 1 volume of oxygen, and 2 volumes of hydrogen, instead of half a volume of oxygen and 1 volume of hydrogen. The same numbers are repeated at page 242; but here we have this saving clause, which shows that the propriety of the numbers here advocated is admitted by Dr. THOMSON himself: "Or if we choose, *for the sake of simplicity*, to represent an atom of hydrogen by a volume of the gas, then we must represent an atom of oxygen by half a volume of the gas."

When speaking of the gases, whose equivalent volume is represented by 2,[†] on the hydrogen unit of volume, Dr. THOMSON says,

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[*] We exclude the equivalent volumes of protoxide of chlorine, nitrous acid vapour, and atmospheric air; the condensation of the elements of the two former compounds not being well made out, and the latter, not being generally admitted to be a chemical compound. These compounds being included, the ratios will be expressed by 1, 2, 2.5, 3, 4, and 5.

[†] Dr. Thomson enumerates five gases as having this equivalent volume; namely, ammonia, hydrocyanic acid vapour, deutoxide of azote, (nitrous gas) muriatic acid, and hydriodic acid. He might have added to the list, chlorocyanic acid, it being composed of 1 volume of each of its constituents, without condensation.

"When we compare these five gases with each other, an atom may be substituted for a volume; but when we compare them with the gases in the preceding table, [meaning the gases whose volume is represented by unity] two volumes represent an atom, while 1 volume of the second set of gases represents an atom." Vol. I. p. 247. Now, although we admit the truth of the statements, contained in the above quotation, we object to them as unsettling the numbers, expressive of equivalent volumes; for we are fully convinced, that great simplicity would be attained, by denoting the ratios by volumes, by a series of constant numbers, always having the same co-relation to the series, representing atomic weights.[*]

The next subject we propose to notice, is the relation between the specific gravity of gases and their atomic weights. For the fullest exposition of this relation, we are indebted to Dr. Prout; but the fact of its simplicity followed as a necessary consequence to the theory of volumes, established by Gay-Lussac. For it must be evident, that, while the atomic numbers are merely the combining ratios of bodies by weight, combining volumes represent the spaces, which the different chemical substances, taken in quantities represented by their atomic numbers, would occupy. If then the combining volumes are found to have a very simple relation to each other, a simple relation is obviously established between the atomic weight and specific gravity. Let us suppose, for a moment, that the volumes, in which gases combined, was always equality; then it is evident, that the atomic weights of the gases would be the weights of *equal* volumes, or their specific gravity. Let us suppose, again, that 3 gases combine in the ratio of 1, 2, and 4 by volume; then their several atomic numbers will represent the weight of volumes of such gases, having the relation, 1, 2, and 4. Call the atomic weight of the gas, whose ratio by volume is denoted by the smallest number, its specific gravity, and then the atomic weight of the 2nd gas will represent twice its specific gravity, and that of the 3d, 4 times its specific gravity.

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[*] The advantage of fixed over shifting ratios becomes very apparent, when one gaseous body combines with another in multiple proportions: thus,

1 atom of carbonic acid, more 1 atom of ammonia, form carbonate of ammonia; and

2 atoms of carbonic acid, more 1 atom of ammonia, form bicarbonate of ammonia.

Now if we turn these atomic weights into the *equivalent* volumes, 1 volume of carbonic acid representing 1 atom, and 2 volumes of ammonia, 1 atom also; we then have

1 volume of carbonic acid, more 2 volumes of ammonia, forming carbonate of ammonia; and

2 volumes of carbonic acid, more 2 volumes of ammonia, forming bicarbonate of ammonia.

Here all the expressions, both by weight and volume, are equivalent, or convertible quantities; but if we choose to express the bicarbonate by single volumes, merely because the ratio is that of equality, we destroy the symmetry of the numbers, and create ambiguity as to the real bi-compound.

To apply the illustration to a real case,—oxygen, hydrogen, and ammonia have their combining volumes expressed by the ratios, 1, 2, and 4; while their atomic weights, on the oxygen scale, are, 1, 0.125, and 2.125. Assume it, that the atomic weight of oxygen represents its specific gravity; then the atomic weight of hydrogen will denote a portion of this gas, double in bulk of that represented by the atom of oxygen, or twice its specific gravity, and the atom of ammonia, quadruple said bulk, or quadruple its specific gravity. So that calling the specific gravity of oxygen 1, that of hydrogen becomes 0.125, divided by 2 = .0625, and that of ammonia, 2.125, divided by 4 = .53125.

If, however, instead of 1, we call the specific gravity of oxygen 1.1111, by which number it will be represented, atmospheric air being reckoned unity; then, by the rule of proportion, we may increase the atomic weights of hydrogen and ammonia, in the same ratio; whereby we shall obtain numbers, representing respectively, double and quadruple the specific gravity of these bodies. Thus, we may say .as the atomic weight of oxygen, 1, is to its specific gravity, 1.1111,—so is the atomic weight of hydrogen, .125, to twice its specific gravity. This proportion gives for the 4th term, .1388, which divided by 2, gives .0694. A similar proportion for ammonia, gives 2.36108, which, divided by 4, gives .59027 for the specific gravity of this gas.

From what has been said, it must appear evident, that, knowing the atomic weights of the gases, and these weights representing simple relations of volumes, it must be very easy to calculate their specific gravity, relatively to any assumed standard. We have made this calculation for two gases, assuming the combining ratio of oxygen as its specific gravity, and giving it the several values of 1 and 1.1111. When the relation in volume of atomic weights of oxygen and another gas is as 1 to 2, which is the most usual ratio; then, upon any assumed number for the specific gravity of oxygen, the number obtained for such gas, by the rule of three calculation given in the preceding paragraph, will represent twice its specific gravity, and must be divided by 2. In all such cases, then, the formula for calculating specific gravity, will be to multiply the atomic weight of any gas, by the specific gravity of oxygen, and divide the product by 2. When, however, the ratio of volume representing the atomic weights, is as 1 to 4, which is the case with a few gases, compared with oxygen, then the formula is the same, except that the number obtained by multiplying the atomic weight into the specific gravity must be divided by 4.

In the first set of cases, where the relation of the combining volume of oxygen to that of other gases, is as 1 to 2, if we make the 2nd term in the proportion, half the specific gravity of oxygen, then the 4th term becomes diminished one-half, and gives at once the specific gravity sought. Thus, we may calculate the specific gravity of hydrogen by the following proportion:

1 : .5555, or half the sp. gr. of oxygen :: .125 : .0694

This obviously comes to the same thing as

1 : 1.1111 :: .125 : .1388, dividing the fourth term of the proportion by 2.

The first formula is evidently the shortest, and is applicable to all those gases, (about five-sixths of the whole) whose combining volume is double that of oxygen. It is perceived that it merely consists in multiplying the atomic weight of the gas, whose specific gravity is sought, by half the specific gravity of oxygen. When however, the combining volume of a gas is quadruple that of oxygen, a similar short process of calculation may be pursued, consisting in multiplying the atomic weight of such gas by one-fourth the specific gravity of oxygen.

We have been thus particular in explaining both the principles and practice of the calculations for specific gravity, as founded on the theories of atoms and volumes; because Dr. THOMSON, in his book, has given us nothing but confused and detached observations on the subject. Thus he says at page 25, Vol I.

Dr. Prout "observed also, that, in general, the specific gravity of the body in the gaseous state, may be obtained by multiplying its atomic weight by 0.5555, or half the specific gravity of oxygen gas; because the atom of oxygen is represented by half a volume, but that of most other substances by a whole volume." Again he observes, Vol. I. page 241, "Dr. Prout first pointed out the connexion, which existed between the specific gravity and the atomic weights of the gases, and showed, that, in general, the specific gravity is equal to the atomic weight, multiplied by half the specific gravity of oxygen gas." Again he says

"The specific gravities of oxygen gas, hydrogen gas, chlorine gas, and azotic gas, have been determined with rigid accuracy in the preceding chapters. The knowledge of the atomic weights of the other bodies will enable us to determine the specific gravities of the vapours and gases, of which they constitute parts, with equal accuracy; for we obtain these specific gravities by multiplying the atomic weights by 0.5555.

"The following table exhibits the atomic weights and specific gravities of all the gases and vapours coming under this *law*." Vol. I. p. 243. [Here follows a table of gases, whose combining volume is double that of oxygen.]

After explaining in an imperfect manner, the peculiar relation of the five gases, whose combining volume is quadruple that of oxygen, we have these words:

"From what has been just stated, it must be obvious, that, in these five gases, the specific gravity will be obtained by multiplying the atomic weight of each by 0.2777, or one-fourth of the specific gravity of oxygen gas." Vol. I. p. 247.

Thus it would appear, that Dr. THOMSON regards as a chemical law, the arithmetical process of calculating the specific gravity of gases, by multiplying their atomic weights by certain numbers. Certainly, this is not a distinct way of presenting the subject. The general chemical fact or law, on which the relation of specific gravity to atomic weight is founded, is evidently the simple ratio of the spaces, which atomic quantities of the gases occupy. Knowing, therefore, the comparative weights of volumes, having the ratio of 1 to 2, or 1 to 4, no person could be at a loss, from such data, to calculate the comparative weights of *equal* volumes, upon any assumed standard.

Again, upon knowing the comparative volumes of the atomic weights of gases, we have the data necessary for calculating such weights upon any assumed standard, by means of their specific gravity. Thus, the specific gravity of oxygen and azote being given, and the ratio of volumes, correspondent to the atomic weights of these gases, being known to be as 1 to 2, we have all the data, requisite to calculate the atomic weight of azote, on any assumed number for oxygen. Call the specific gravity of oxygen 1.1111, and that of azote .9722, and let the atomic number of oxygen be assumed at 1, then we have this proportion,

$$1.1111 : .9722 :: 1 : .875$$

As the fourth term gives the weight of a quantity of azote, equal in volume to the oxygen, it represents but half the atomic weight of that gas. .875, therefore, multiplied by 2, gives 1.75, or the atomic weight of azote.

If it be desired to avoid doubling the fourth term, as a subsequent arithmetical operation, all that is necessary, is to halve the first term, which gives the fourth at once, at double what it would otherwise be. We then have this proportion:

$$.5555 : .9722 :: 1 : 1.75$$

The arithmetical operation here necessary is obviously to divide the specific gravity of azote by half the specific gravity of oxygen; and the proportion, on which it is founded, is applicable to all gases, whose atomic weights correspond to volumes, as 1 to 2. When the atomic weight of oxygen, and that of any other gas, represent volumes, as 1 to 4, the arithmetical rule would be to divide the specific gravity of such gas, by one-fourth the specific gravity of oxygen, or .2777.

Here then is laid open to the reader, the grounds of another misnamed chemical law of Dr. Thomson, the reverse of the first; namely, that if you divide the specific gravity of a gas by half or one-fourth the specific gravity of oxygen, you obtain its atomic weight.

In the preface to the work before us, we are told, that it is principally intended as an exposition of the atomic theory, for the use of the public class of students of the author; in order to relieve his lectures from the abstruse details, which are necessarily connected with this subject. We would, therefore, beg leave to ask, whether the enunciation of rules, consisting of one arithmetical operation, and dependent on a train of reasoning not explained, can subserve the purposes of philosophical explanation.

Connected with this branch of our analysis, we have a very remarkable passage in our author. He says, "Thus it appears, that the atomic weight of oxygen is obtained by *dividing the specific gravity of oxygen gas by itself;* for $\frac{1.1111}{1.1111} = 1$." Vol. I. p. 243. It is difficult to obtain any definite idea from this sentence. The result is got by this unmeaning proportion,—that if 1.1111 in volume weigh 1.1111, then 1 in volume will weigh 1! The fact is, we cannot calculate the atomic weight of oxygen, unless empyrically; since it is at last but a simple assumption.

As a note to the rule for calculating the atomic weights of gases, by *dividing* their specific gravity by half the specific gravity of oxygen, we have the following confused remarks:

> "I need hardly point out to the reader, that the reason why the multiplicand of the specific gravity of the gases is ½, or ¼th the specific gravity of oxygen gas, instead of simply ½ and ¼, is, that the specific gravities and the atomic weights are referred to different standards. The *specific gravity* of atmospheric air is reckoned unity, and that of every other gas is referred to it; but the atomic weight of oxygen being unity, and that of all the other gases referred to it, as far as atomic weights are concerned, it is obvious, that when specific gravities are to be converted into atomic weights, we must employ for our divisor half or ¼th the specific [gravity] of oxygen gas, in order to change one system into the other. All this trouble would be saved, if we were to make the specific gravity of oxygen gas unity, as well as its atomic weight." Vol. I. p. 243.

It is evident that the explanation intended to be conveyed in the above quotation entirely fails. The truth is, that it is difficult even to know what the author meant to convey, though we presume we have discovered it. We shall not, however, stop to show specifically, in what consist the looseness and obscurity of this note. These are too obvious to require pointing out.

In reference to the arithmetical rules of converting atomic weights into specific gravities, as applied to gases, assuming oxygen as the atomic unit, it may be worth while to remark, that equally simple ones are applicable upon the hydrogen standard. When a gas has the same combining volume with hydrogen, all that is necessary, in order to calculate its specific gravity, is to multiply its atomic weight by the specific gravity of hydrogen, which solves this proportion, applicable to all such cases:

1 (atomic weight of hyd.) : atomic weight of the gas : :
.0694 : specific gravity required.

When the gas, whose specific gravity is sought, has a combining volume, which is double that of hydrogen, then the 3d term of the proportion must be taken at half the specific gravity of hydrogen. But if it have a combining volume, half that of hydrogen, then the 3d term must be assumed at double the specific gravity of hydrogen.

To perform the converse operation of converting specific gravities into atomic weights on the hydrogen scale, it is plain that all that is necessary is to divide the specific gravity of any gas by the specific gravity of hydrogen, or half or double its specific gravity; according as the relation of the combining volume of hydrogen, compared with that of any particular gas, may happen to be.

We have insisted on the expediency of having constant numbers to denote the ratios of combining volume, and admitted the propriety of the numbers, generally adopted by Dr. THOMSON. We have also shown, how the numerical representations of combination, both by weight and volume, may become convertible terms, a principle of which our author frequently avails himself in his calculations. Notwithstanding the aid derived from a knowledge of the equivalent ratios, Dr. THOMSON has strangely mistook the nature of olefiant gas. Thus he says,

> " Olefiant gas has not been inserted in the preceding tables; it has been reserved for separate notice, on account of the peculiarity of its nature. Its specific gravity is 0.9722; and it is obvious from the phenomena of its combustion, that it consists of 2 volumes of hydrogen gas, and 2 volumes of carbon vapour, condensed into one volume. Now, as in these two bodies, atoms may be substituted for volumes, this gas is obviously a compound of 2 *atoms* hydrogen, and 2 *atoms* carbon. Hence its atomic weight is 1.75; but 1.75 × 0.5555 = 0.9722;—so that this gas coincides with the compound gases in the second table." [Table containing the gases, whose combining volume is 1.] Vol. I. p. 248.

Here the duplication of the volume equivalents of hydrogen and carbon is very unphilosophically resorted to, to denote the composition in volume of olefiant gas. While our author correctly converts them into their correspondent atomic weights, he brings out the absurdity, that the gas in question consists "of 2 *atoms hydrogen and* 2 *atoms carbon.*" In the next paragraph, however, we are correctly told, that this gas "is obviously a compound of 1 *atom hydrogen and* 1 *atom carbon.*"

By the first assumption, the combining volume and atomic weight of the gas are improperly doubled, in order, as it would seem, to render the multiplier for specific gravity, (.5555) employed when the combining volume is unity, applicable to it.

The truth is that olefiant gas is really a compound of 1 atom of hydrogen and 1 atom of carbon; which weights, converted into their co-equivalent volumes, give 1 volume of hydrogen, and 1 volume of the vapour of carbon, as the composition in volume. These volumes being condensed into one-fourth of their original bulk, gives *half a volume* as the *combining volume* of olefiant gas; that is, the *bulk* correspondent to its atom. Thus it is evident, that olefiant gas and oxygen affect the same combining volume; and calling the combining volume of oxygen half a volume, the combining volume of olefiant gas is also half a volume. It is consequently clear, that the atomic weights of these two gases are in the same ratio as their specific gravities, and to calculate the specific gravity of olefiant gas, we have this proportion;—1 : .875 :: 1.1111 : .9722; to solve which, it is merely necessary to multiply .875, the real atomic weight of olefiant gas, by 1.1111, the specific gravity of oxygen.

Thus then it is perceived, that the rule for calculating the specific gravity of olefiant gas, is to multiply its atomic weight, by the specific gravity of oxygen entire.

It cannot be presumed, that Dr. THOMSON deserted the principles, which regulate our reasonings respecting atomic combination, in reference to olefiant gas, merely from a repugnance to the admission, that any gas could have the same combining volume with oxygen. For his book will show, that he has given to fluosilicic acid this very relation to oxygen. Hence in his tables, fluosilicic acid is the only gas associated with oxygen, and its specific gravity is directed to be obtained by multiplying its atomic weight by the specific gravity of oxygen.

It seems rather unfortunate, that Dr. THOMSON should, on theoretical grounds, have associated fluosilicic acid with oxygen, as having the same equivalent volume; and at the same time, placed elsewhere olefiant gas, which, for the most conclusive reasons, ought to have been classed with that supporter.

Connected with olefiant gas, we have some remarkable speculations in the work before us. Dr. THOMSON is of opinion, that there exist four varieties of this gas, all identical with it in the proportions of their constituents, but differing in the degree of condensation, which the elements have undergone. Thus, representing olefiant gas as

$$\left.\begin{array}{l}\text{2 volumes of carbon vapour} +\\ \text{2 volumes of hydrogen}\end{array}\right\}\begin{array}{c}\text{condensed into}\\ \text{1 volume,}\end{array}$$

Dr. THOMSON conceives that there exists a variety of this gas, less condensed, composed of

$$\left.\begin{array}{l}\text{1 volume of carbon vapour +}\\ \text{1 volume of hydrogen}\end{array}\right\}\begin{array}{l}\text{condensed into}\\ \text{ 1 volume;}\end{array}$$

and three varieties, more condensed, consisting, severally, of

$$\left.\begin{array}{l}\text{3 volumes of carbon vapour +}\\ \text{3 volumes of hydrogen}\end{array}\right\}\begin{array}{l}\text{condensed into}\\ \text{ 1 volume,}\end{array}$$

$$\left.\begin{array}{l}\text{4 volumes of carbon vapour +}\\ \text{4 volumes of hydrogen}\end{array}\right\}\begin{array}{l}\text{condensed into}\\ \text{ 1 volume, and}\end{array}$$

$$\left.\begin{array}{l}\text{6 volumes of carbon vapour +}\\ \text{6 volumes of hydrogen}\end{array}\right\}\begin{array}{l}\text{condensed into}\\ \text{ 1 volume.}\end{array}$$

The first variety is a product of Dr. Thomson's imagination. "He sees no reason to doubt its existence." Are we to suppose, that the temptation, furnished by the vacant niche at the beginning of the series, was too strong, to permit it to remain unfilled? Surely this indulgence in purely hypothetical views but badly accords with the exclusive experimental character of the work, as announced in its title.

The second variety, consisting of three volumes of each element, condensed into 1 volume, is stated to have been discovered by Mr. Dalton, as a product of whale oil, exposed to a red heat. We have examined the memoir of Mr. Dalton on oil gas, and find that no such combination is alluded to. The new gas mentioned by him under the name of superolefiant, is supposed to consist, either of two atoms of olefiant gas with one of carburetted hydrogen, (bihydroguret of carbon) condensed into the space of two atoms of olefiant gas;[*] or of two atoms of olefiant gas, comprised in the space of one. Now neither of these suppositions furnishes a gas, agreeing with Dr. Thomson's 2nd variety of olefiant gas.

The 3d variety, consisting of 4 volumes of each element, condensed into 1 volume, would agree with one supposition of the constitution of superolefiant gas, as given by Mr. Dalton; namely, that this gas consists of two atoms of olefiant gas, comprised in the space of one. Its existence, however, is not made to rest on Mr. Dalton's authority. It is alleged by Dr. Thomson to constitute the vapour of sulphuric ether. This we admit, when this vapour is considered apart from the water which it contains; in other words, is destroyed. For it is known, that sulphuric ether consists of 2 volumes of olefiant gas, and 1 volume of the vapour of water, condensed into 1 volume. There appears to be no instance of a compound gas, undergoing a further condensation by a new combination, except in the constitution of the vapour of sulphuric ether, and consequently, we cannot illustrate the point under consideration by analogies; but still we think it unphilosophical to trace the condensation, produced by chemical union, of a particular component of a gas, and then to speak of such component, as *per se* so condensible.

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[*] Mr. Dalton's words are, "In order to form a gas," [which for every 100 measures would produce by explosion, 300 measures of carbonic acid, and consume 500 measures of oxygen,] "it would only be required to combine an atom of olefiant gas with 1 of carburetted hydrogen, and to condense them both into the space of 1 atom of olefiant gas." Manchester Memoirs, Second series, Vol. IV. published in 1824, p. 75.

The above statement evidently contains an error of inadvertency; as a gas, formed as there directed, would not, by explosion, furnish carbonic acid, and consume oxygen in the proportions assumed. The mistake has arisen from supposing, (on the assumption of 1 volume of light carburetted hydrogen being equivalent to an atom) that 1 volume of olefiant gas also represents an atom, whereas it represents 2 atoms. We have corrected the error in our text.

The 4th variety, consisting of 6 volumes of each element of olefiant gas, condensed into 1 volume, is stated by Dr. Thomson to be furnished by the vapour of naphtha from coal.

In regard to these alleged varieties of olefiant gas, we must be permitted to remain skeptical, until their existence shall be established by satisfactory experiments. As yet we have no analogy to bear us out in the supposition, that there can exist compound gases, identical in all respects, except in the condensation which their elements have undergone; and before we admit a new principle of combination, the facts, which, if proved, would establish it, ought to be scrupulously examined.

The specific gravity of any compound gas being known, we have all the data necessary for calculating that of its constituents, upon knowing the proportions in which such constituents combine, both by weight and volume. In calculating the specific gravity of oxygen and azote from atmospheric air, we connect at once the specific gravity of these bodies with the assumed specific gravity of the latter compound; and our ratios emanate directly from the only source of all the specific gravity numbers for the gases. This being the fact, the first and most important step, in ascertaining the specific gravity of the gases, is to deduce, by the most rigidly exact experiments, the specific gravities of azote and oxygen from atmospheric air. In this way, we not merely obtain an independent ratio, correct for these two gases, but accurate also with reference to the common standard.

Dr. Thomson has been fully sensible of the importance of this determination, and by experiments, has amply confirmed the generally admitted fact, that atmospheric air consists of 2 volumes of azote, and half a volume of oxygen, without condensation. It being fully proved, that atomic quantities of azote and oxygen, (1.75 and 1) are in volume to each other as 2 to 1, it is easy to calculate the relative weights of bulks of these gases, in the ratio of 4 to 1. So that knowing the composition of atmospheric air both by weight and volume, we have all the data necessary, as above mentioned, for calculating the specific gravity of azote and oxygen.

Dr. Thomson, on these data, calculates, in a note, by the help of algebra, the specific gravity of azote and oxygen. But we object to this recourse to algebra, when its assistance is not needed. To solve the question, all that is necessary is to say, that 1 volume of air weighs 1, and that, while the oxygen in it, is to the azote in weight, as 1 to 3.5, or 2 to 7, the same elements are to each other in volume, as 1 to 4. Two-ninths of its weight, therefore, are oxygen, occupying the space of one-fifth of a volume; and consequently, two-ninths of $1 \times 5 =$ the weight of 1 volume of oxygen, or its specific gravity. Now two-ninths of 1 are .22222, which number, multiplied by 5, gives us 1.1111 as the specific gravity of oxygen.

On the other hand, seven-ninths of 1 give the weight of four-fifths of a volume of azote; and $\frac{1}{4}$th of this number, added to itself, gives the weight of 1 volume of azote, or its specific gravity. Now seven-ninths of 1 are .77777, $\frac{1}{4}$th of which number, added to itself, gives .9722 for the specific gravity of azote.

Having availed ourselves of the advantages of the analysis of atmospheric air, with a view to the specific gravity of its constituents, thereby connecting the numbers for two important gases, directly with the standard unit of specific gravity,—if the numbers obtained are further confirmed by direct experiment, we attain all the precision of which the subject is susceptible. This precision is in fact reached, in relation to the gases in question. For by the experiments of Berzelius and Dulong, which may be considered the most elaborate, the specific gravity of oxygen is 1.1026, and that of azote, .9760,* which determinations come sufficiently near to 1.1111, and .9722, to create confidence in the latter numbers.

Dr. Thomson gives us 1.1117, as his experimental result by weighing for the specific gravity of oxygen. This number is nearer than any other to its specific gravity, as deduced from the composition of atmospheric air. Dr. Thomson, however, is not content with this result, but seeks the specific gravity of oxygen by a new method. Having made an analysis of oxide of zinc with scrupulous attention to accuracy, he deduced the volume of oxygen, which combines with a given weight of this metal to convert it into oxide, by ascertaining the volume of hydrogen, which its solution in dilute sulphuric acid yields. Knowing, in this way, the weight of a given volume of oxygen, it was easy to calculate its specific gravity.† Proceeding in this manner, he brings out the specific gravity of oxygen, 1.1111 "nearly." Now the exact number, which he obtains from his data, is 1.1119, which differs from the number, which he supposes absolutely correct, more than his determination by the ordinary method of weighing. The new determination may be a good coincidence; but it is a strange way to prove *experimentally*, "that the specific gravity of oxygen gas must be 1.1111," by showing that it is 1.1119.

We would, by no means, be understood to doubt for a moment, the correctness of the specific gravities for oxygen and azote, adopted by Dr. Thomson; they being confirmed by a multitude of coincidences, dependent both on theory and experiment. But we object to the pretensions, held out in the present work, that certain numbers are rigidly and exactly obtained by experiment; whereas nothing is arrived at but good approximations, a result which had been previously accomplished by several celebrated chemists.

While on this branch of our analysis, we may state, as a general objection to the work before us, the too great anxiety to establish certain numbers, whose correctness had been predetermined in the mind of the author. This is evinced by the rejection of experimental results as inaccurate, when not coincident with preconceived atomic weights; and by the practice of deducing mean determinations from selected analyses of different compounds, whose atomic constitution is most artificially conceived. In proof of the last observation, we will merely refer to the mode of proceeding in the present work, to determine the atomic weight of silica and alumina.

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* Dr. Thomson has very unwarrantably pronounced these experimental results of Berzelius and Dulong to be inaccurate; because, on the generally admitted composition of atmospheric air by weight and volume, its calculated specific gravity comes out 1.00172, instead of unity! Even conceding that Berzelius and Dulong admit the data of Dr. Thomson, the calculated specific gravity of atmospheric air being so near to unity, rather confirms the precision of their experiments. No experimental results can be absolutely exact except by accident.

† Connected with this experiment, there are several errors in the calculations. See vol I. pp. 64 and 65.

We have already adverted to the general facts of chemical combination, which form the basis of the atomic theory. Now Dr. Thomson was an early and strenuous advocate of this theory, and in the present work, constantly uses the expression, atom, and atomic weight, to denote equivalent ratios. It is a fundamental position of this doctrine, that chemical proportions are *reciprocating*, because they represent the weights of atoms, whose ratios are necessarily reciprocating; and that successive proportions are *multiple*, because combinations by *indivisible* atoms admits not of intermediate gradations. Hence it must appear evident, that the admission of the existence of *fractional* atoms is fatal to the atomic theory.

Notwithstanding the truth of these remarks, Dr. Thomson has ventured to employ fractional atoms in particular cases, on the ground of expediency. This inconsistency of dividing in practice, what is assumed to be in its own nature indivisible, was not to be expected from a strenuous advocate of the atomic philosophy, as Dr. Thomson is known to be.

When the number of atoms, representing the constituents of a compound, is as 1 to 1½, we may, as Dr. Thomson mentions, remove the anomaly, by doubling the numbers, and considering the combination as consisting of 2 atoms to 3. By the last supposition, the atomic weight of a body becomes evidently twice as great as by the first. As the atomic numbers are *cumulative*, that is, are larger the more compounded a body is, or the more complex its atomic nature may be,—it appears possible, to determine the atomic constitution of some doubtful compounds, where the number of atoms is as 2 to 3, by carefully investigating their equivalent numbers. But unfortunately, the combinations, into which such compounds enter, are so few, that it is not easy to remove all ambiguity in judging of their combining weights.

As connected with this subject, we would object to the omission to reduce atomic quantities to the lowest atomic terms. Examples of such omissions are afforded by the statements of the ultimate composition of several vegetable acids. Thus citric acid is stated to be composed of

2 atoms of hydrogen,
4 atoms of carbon, and
4 atoms of oxygen:—instead of
1 atom of hydrogen,
2 atoms of carbon, and
2 atoms of oxygen,—or the same proportions, reduced to their lowest terms. The same remark is applicable to benzoic and saclactic acids.

The supposed necessity for this artificial mode of viewing the atomic composition of particular vegetable acids, is to make their atomic weights, deduced from ultimate analysis, coincide with those obtained by analysing their saline combinations. But the difficulty is easily removed, by considering several atoms of acid to be united to one of base. Thus, if the equivalent from ultimate analysis be half the saline equivalent, it is only necessary to consider the saline combinations as bi-salts; if one-third the saline equivalent, as in the case of benzoic acid, the salts formed may be viewed as tri-salts.

Connected with the atomic constitution of the vegetable acids, we have a remarkable admission in the present work; namely, that substances may possess identity of ultimate composition, without being identical. Thus acetic and succinic acids are both given as composed of

2 atoms of hydrogen,
4 atoms of carbon, and
3 atoms of oxygen.

Depending on the accuracy of the analytic results, Dr. Thomson does not hesitate to consider them as proving, that differences in chemical properties may arise solely from different binary and ternary arrangements of the same ultimate particles. Before, however, so improbable a view is admitted, the atomic weights of the compounds, which are supposed to support it, ought to be ascertained with rigid accuracy.

We have now brought under review all those portions of the present work, which, for the most part, involve fundamental doctrines. Although we have, in some instances, been unable to subscribe to the theoretical views of the author, and ventured to suppose occasionally, that some of his chemical laws are empirically deduced from particular classes of cases, rather than from a broad view of chemical phenomena, yet we freely acknowledge, in his experimental labours, a large contribution to our stock of chemical facts. It is not in our power to do justice to the merits of the work, in this particular, within the limits of the present article. All that we can accomplish is to notice, in a concise manner, some facts and observations, which are either new or not generally known.

The decomposition of nitrate of potassa by sulphuric acid, to obtain nitric acid, using the usual proportions, is known to yield this acid, containing 2 atoms water; while the residuum of the process is bisulphate of potassa. The results depend upon using twice as much sulphuric acid as is sufficient to neutralize the potassa of the nitre; while the 2 atoms of water, contained in that quantity of sulphuric acid, become transferred to the nitric acid, which distils over. The specific gravity of the acid, when thus obtained, is 1.48. Dr. Thomson, however, informs us, that if we use atomic quantities of nitrate of potassa and the strongest sulphuric acid, the nitric acid obtained will be the strongest that can be procured, containing but 1 atom of water, and having the specific gravity of 1.55. Vol. I. p. 113.

Dr. Thomson has proved in a satisfactory manner, that borax is composed of

2 atoms boracic acid	6
1 atom soda	4
8 atoms water	9
	19

So that the salt, usually called sub-borate of soda from the predominance of alkaline qualities, is really a bi-borate. This result shows, that the neutralizing power of boracic acid is very inferior, and that the acid itself, like the carbonic, is a weak acid. Vol. I. p. 167.

Two species of phosphuretted hydrogen are generally admitted to exist; namely, hydroguret of phosphorus, and bihydroguret of phosphorus. In the work before us, however, the existence of a third species is contended for, and supported by experimental results, under the name of subphosphuretted hydrogen. It is stated to consist of

1 atom of hydrogen	.125
¾ths of an atom of phosphorus	1.125
	1.25

As the composition of this gas does not accord with atomic proportions, we are disposed to doubt its existence as a peculiar chemical compound. It is indeed true, that two atoms of hydroguret of phosphorus, and 1 atom of bihydroguret, combined together, would form a similar compound; but such an atomic constitution is too complicated to be probable. Vol. I. p. 207.

The fuming sulphuric acid of Nordhausen was ascertained by Dr. THOMSON's analysis, to consist of

2 atoms dry acid	10.
1 atom water	1.125
	11.125

When this acid is distilled into a refrigerated receiver, "one half of the acid passes over in a solid state, forming a snow-white solid acid, like asbestus in appearance."* What remains in the retort is evidently ordinary sulphuric acid. If the experiment be accurate, the white solid acid must be anhydrous sulphuric acid. But what seems to put this supposition beyond a doubt is the following ingenious experiment of Dr. THOMSON.

After stating that the "avidity" of the solid acid "for water is so great, that it smokes violently, when exposed to the air, and is dissipated so speedily, that it cannot be weighed," he proceeds; "But, by dropping a piece of it into a known weight of water, and then determining the increase of the weight of the liquid, I was enabled (by throwing down the acid by means of muriate of barytes) to show that, when solid, it consists of pure acid, totally destitute of water." Vol. I. pp. 215, 216.

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* The solid acid was first obtained by pursuing this process, by Vogel, who suspected it to be anhydrous.

A novel fact is mentioned respecting the protosulphate of manganese. "Its taste" is stated to be "somewhat similar to that of Glauber's salt, but rather more disagreeable; and like that salt, it acts as a cathartic, when taken to the extent of about half an ounce." Vol. I. p. 365.

Dr. Thomson's experiments furnish ample confirmation of the suggestion, first made by Dobereiner in 1815, that hydrogen is not an element in anhydrous oxalic acid, and consequently that this acid is a binary compound of carbon and oxygen. The same fact was proved by Dr. Ure, and is at present admitted by Berzelius himself. Its composition, from these concurrent results, is

2 atoms of carbon	1.5
3 atoms of oxygen	3.0
	4.5

equivalent to

1 atom of carbonic oxide	1.75
1 atom of carbonic acid	2.75
	4.5

A curious experiment by Dobereiner, quoted by Dr. Thomson, appears to prove, that the proximate constituents of this acid are really carbonic oxide and carbonic acid, and that it cannot exist independently of water. Oxalic acid dried, but still containing a quantity of water, was added to fuming sulphuric acid, in an apparatus to collect the gaseous products. The oxalic acid disappeared, while the sulphuric acid underwent no change but a diminution of strength; and the gaseous matter evolved proved to consist of equal volumes of carbonic oxide and carbonic acid. Vol. II. p. 109.

In like manner, Dobereiner has ascertained, that formic acid, being added to concentrated sulphuric acid, is resolved into water, which combines with the latter acid, and carbonic oxide, which is evolved; and these products correspond precisely with the results of ultimate analysis. Vol. II. p. 150.

Uric acid, like oxalic acid, appears to be devoid of hydrogen;

when anhydrous. This is proved by concurrent results, obtained by Dr. Prout and Dr. Thomson. Vol. II. pp. 162, 163.

Under the head of salts of potassa, we have described a new species of carbonate of potassa, under the name of sesquicarbonate. It was first observed by Dr. Nimmo of Glasgow. It may be formed by mixing carbonate of ammonia with a solution of impure carbonate of potassa, and disengaging the ammonia. Vol. II. p. 255.

As particularly interesting in a medical point of view, we deem it proper to extract the results of Dr. Thomson's analysis of emetic tartar. Its constituents are stated to be

2 atoms tartaric acid	16.5
1 atom potassa	6.0
3 atoms protoxide of antimony	19.5
2 atoms water	2.25
	44.25

Or calculated on the hydrogen scale of numbers;—

2 atoms tartaric acid	132
1 atom potassa	48
3 atoms protoxide of antimony	156
2 atoms water	18
	354

Mr. Phillips has also recently analysed this important salt with the same result, except in the proportion of water, which he finds to be 3 atoms, instead of 2. The coincidence, however, in respect to the important constituents serves to confirm the general correctness of both analyses. By Dr. Thomson's analysis, we may consider tartarized antimony to be 1 integrant particle or atom of hydrous bitartrate of potassa, (cream of tartar) combined with 3 atoms of protoxide of antimony; for cream of tartar, according to Dr. Thomson's analysis, contains 2 atoms of water. It appears, at least, certain, that the cream of tartar is not decomposed in the processes for emetic tartar; since the solution obtained, according to both Mr. Phillips and Dr. Thomson, yields the antimonial salt to the last drop. Vol. II. p. 441.

In regard to the general accuracy of Dr. Thomson's work, we may remark, that we have detected a considerable number of errors of inadvertence. In the first volume, at page 119, it is stated, that "if 1 volume of protoxide of azote, and half a volume of oxygen gas, were to unite and be *reduced to three-fourths of a volume*, we should obtain a compound, having the constituents and specific gravity of deutoxide of azote." The words in italics ought to be, *expanded to 2 volumes.* At page 38, the fact is correctly stated. At page 209, in the enumeration of the different acids of phosphorus, hypophosphorous acid is omitted. At page 388, *cerium* is printed for *cadmium.* At pages 416 and 417, some confusion evidently exists respecting the sulphurets of copper, a recapitulation of three being given, when two only are described.

In the second volume, we have the following errors. At page 40, the *peroxide* of antimony is stated to be precipitated from the nitro-muriatic solution of antimony, instead of the *protoxide.* At page 240, *deutoxide* of azote is printed for *protoxide* of azote. At page 324, *peroxide* of iron occurs, instead of *protoxide* of iron. In the statement of the composition of acetate of iron, at the top of page 325, 1 atom of *soda* is printed for 1 atom of *protoxide of iron.* At page 450, the soda-oxalate of copper is stated to be *insoluble*, whereas it is *soluble.**

It is time to bring this article to a close. From what has been said, the reader will be enabled to form some idea of the character of Dr. Thomson's work. That it is not what its name imports, is sufficiently evident; for no first principle is established by experiment, or indeed by any other process. It is nevertheless valuable, as containing a vast number of analyses, and some corrections of atomic numbers; and unquestionably adds to the reputation of the author as an indefatigable chemist.

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* Besides these inaccuracies, we have the following: In the first volume, several "arithmetical slips" in the calculations at pages 64 and 65, and 70 and 71. In the second volume, we have at p. 97, the number 6.164 for 6.161. At p. 104, (note) paragraph, No. 4, oxalate of *ammonia* is printed for oxalate of *potassa.* At p. 159, near the bottom, "1.125 *grains*" of water are attributed to 8.56 grs. of urate of soda, instead of 0.656 of a grain. At p. 167, lines 11 and 12, "parts of *sulphate of* barytes" occurs, instead of *parts of barytes.* At p. 338, in the statement of the composition of acetate of nickel, *acetic*, occurs for *acetic acid.* At p. 381, in the statement of the composition of subsesquiarseniate of copper, 1½ atoms of oxide of copper are given as weighing 7.75, instead of 7.5. At p. 518, the logarithmic numbers are erroneously subtracted and added, though the result given is correct.

ARTICLE XIII.—*Medico-Chirurgical Transactions.* Vol. xiii. Part I. London, pp. 280, Oct.

No one can be ignorant of the value of those transactions of the Medico-Chirurgical Society, which, for a series of years, have been successively presented to the public. After an interval of unusual duration, a part of another volume has appeared, calculated, as to its general character, to support the reputation of the society and to benefit the profession. Our limits are so restricted, that it would be impossible to present a full analysis of its contents, or even to notice the various papers it comprises; some of which exhibit little that is novel, either as to opinions or facts, while others are valuable from the new views which are presented, or from the confirmation opportunely afforded to remedial measures or theoretical doctrines of doubtful character. Bearing in mind our general maxim of preferring what is useful to what is merely speculative, we shall select from the latter class, a few of the more important papers for a condensed analytical notice.*

We cannot, however, neglect the present opportunity for recommending, in the strongest terms, the publication of medical papers, under the direction and sanction of well constituted societies. It must be acknowledged, that such associations are productive of many benefits to their respective members; for the collision of sentiment, the generous rivalry of enlightened understandings, and even the competition with avowed and determined opposers, serve at once, to repress the arrogant and to encourage the diffident, but deserving; to congregate scattered facts and thoughts for the illumination of genius; to expose superficial or empirical pretensions; and often to elicit truths the most valuable, and which otherwise might have long remained unknown. The advantages thus conferred on a small collection of individuals, should be extended to the public. By means of competent committees of reference, these transactions should be purified from whatever is trite or altogether useless, and thus elaborated, be published in separate volumes, if there be an abundance of what is useful, or in the periodical works of the day, that thus "new facts may be recorded for the consideration of *the many*, who are devoting their time and talents to philosophical pursuits," and "that the mind of the world may be employed upon the observations of individuals."*

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* In our Quarterly Summary will be found some account of several of the remaining papers of the volume under their appropriate heads.

Case of Axillary Aneurism, successfully treated by tying the subclavian artery.—By CHARLES ASTON KEY, Esq. surgeon to Guy's Hospital.

GEORGE VAUGHAN, a healthy man, aged 36, in the month of July, 1823, while making a sudden exertion with his right arm, felt something "snap" below his collar bone;—a pulsating tumour followed, which continued to increase in size, without much pain or inconvenience, or injury to his general health, until about the beginning of September; at which time *a surgeon* undertook to cure the disease by great pressure on the subclavian artery and the aneurismal tumour. From this experiment the hand and arm became œdematous,—the veins varicose, and the tumour enlarged, with a cessation of the pulsation. The pain was now unceasing, preventing sleep and causing great constitutional irritation.

On Friday, Sept. 20th, Mr. KEY, assisted by Mr. TRAVERS, secured the subclavian artery above the clavicle. The operation was, in most respects, performed in the manner usually directed. The chief difficulty arose from the tumour being so large as to elevate the clavicle "to the utmost," and to press it backwards towards the trapezius muscle.

One of the superficial varicose veins required a ligature. The artery was easily found, but the depth of the angle in which it was inclosed, rendered the division of about three quarters of an inch of the clavicular portion of the sterno-mastoid necessary, before the ligature could be passed. By means of an aneurismal needle, moderately curved and fixed to a handle,† the vessel was secured with a single silk ligature. In a short period after the operation, the œdema of the limb subsided, its natural warmth was maintained, and the pain which he had previously suffered, left him as soon as he returned to bed. In eight and forty hours there was a general excitement of the system with an acceleration of the pulse, which was easily removed by a cathartic. The ligature came away on the twelfth day, and the following day, for the first time, he was allowed to walk about the ward.

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* T. W. CHEVALIER, p. 61 of the Vol. under notice.

† A plate is given of the needle and ligature.

The tumour at this time, (Nov. 11th, 1823,) is subsiding, but the pulse at the wrist cannot be felt. In May, 1824, Mr. KEY could not detect the pulse; the patient was quite well, and gradually gaining the use of his arm, which was nearly as perfect as that of the other limb; a little hardness only remained in the situation of the tumour.

Among other remarks on this operation, Mr. KEY says, that the only circumstance which ought to deter a surgeon from putting a ligature around any artery in the human body, is the uniform cessation of circulation in the parts below the ligature. This is not the case as regards the subclavian operation. Here, the most common causes of death are suppuration in the anterior mediastinum, from violence done to the parts during the operation, and inflammation of the pleura, followed by effusion into the cavity of the thorax.

A Case of Pale Dry Gangrene—from injury to the blood-vessels of the lower extremity. By THOMAS WILLIAM CHEVALIER, Esq.

ON the 5th of Sept. 1823, T. M., aged 32 years, of intemperate habits, received a contused wound in his left groin, followed by the loss of a pound and a half of dark coloured blood. The wound was parallel to POUPART's ligament, about three inches long, exposing the femoral artery and vein, and extending directly backwards, on the inner side of the great blood-vessels, for more than two inches.

On the 6th, he suffered from a "peculiar distressing sensation in his foot,"—the lower half of his leg was cold, pale and cadaverous, and there was no pulsation in the arteries of the injured limb. In the evening, the coldness had extended higher; but he could perceive the warmth of a hand, applied to the ankle.

Sept. 7. Coldness as high as the insertion of the ligamentum patellæ, and some discoloration of the limb at this spot; the pain in the shin is greatly aggravated by pressure in the ham.

Sept. 14. Discoloration more extensive near the knee; warmth of a hand still perceptible at the foot, and no vesication or inflammation: above the ankle, the skin is pale; the ankle and foot have gradually assumed a deep transparent colour, not unlike that of new mahogany, and not altered by pressure: the toes are dried and shrunk, and also transparent. *They never lost their cuticle.*

Sept. 18. He had suffered for three days, from febrile irritation, and from costiveness. The wound which had hitherto gone on exceedingly well in all respects, was now glassy, and discharged unhealthy matter. Some discoloration was evident above the condyles, and some increase of heat with slight redness and vesicles, below the knee. The limb was insensible to all impressions, excepting the warmth of a hand, which was now slow in being felt.

Sept. 20. Wound again granulating; and from this time, it retained a healthy appearance.

Sept. 23. A coagulum was discharged from the wound, followed by a venous hæmorrhage. The patient died the same evening.

Dissection.—The arteries near the wound, were all impervious; but the inguinal, the femoral, and the profunda veins, were found terminating by open mouths in the depth of the wound. Some traces of florid blood were found in the anterior tibial artery; while the femoral artery below the wound, was distended with blood of the deepest modena hue. The muscles of the leg were rather livid, but not at all disorganized.

Mr. Chevalier remarks, that the sensibility to warmth, just above the desiccated part of the foot, proves, that even to the last some degree of vitality remained in the *nerves.*

The desiccation of the toes, &c. should, perhaps, be attributed to some degree of activity remaining in the *absorbents*; as their cuticle remained on, retarding evaporation.

The pale or white dry gangrene, according to the observations of Mr. C.'s father and others, takes place only when the veins of the part affected are not obliterated; and on the contrary, the black dry gangrene is one result of the obliteration of both sets of vessels.

Ulceration and Rupture of the Stomach. By Dr. Elliotson.

At the present day, when so much importance is attached to inflammation and ulceration of the mucous tissue, cases similar to the present, acquire an unusual degree of interest.

On Monday, March 1st, 1824, an unmarried lady, about 40 years of age, was suddenly seized with a most excruciating pain in the epigastric. Dr. E. found her an hour afterwards "groaning with agony,"—features contracted—complexion cadaverous—hands blue, and of an icy coldness—general shiverings—pulse 120—breathing quick and sharp—nausea—occasional vomiting.

From the first, there was pain in the epigastrium on pressure; and this increased, although the constant agony remained as before. Laudanum was administered freely; at first, with no effect. Bleeding to ℥xx neither produced faintness, nor afforded the least relief; the blood did not become cupped or buffy. After the fifth dose of sixty drops of tincture of opium, she soon found herself considerably better.

Tuesday. Still better, but there is much tenderness of the abdomen and great thirst, although no foulness of the tongue; a large blister directed. Calomel, gr. x.

Wednesday. Tenderness very great, and all over the abdomen; pulse 120, small and feeble; coldness; dyspnœa; ghastly countenance; bowels not moved; tongue still clean; thirst great: "she had been incessantly drinking water so hot that no one but herself could hold the glass from which she drank it." Cal. gr. v—q. t. h. enemata of sulph. magnes. ℥iij. and ol. croton. gtt. iij. Vomited the calomel. The croton oil was then given by the mouth.

Thursday. One motion procured. "Her constant pain was infinitely less;" pressure tolerable, except at the epigastrium; pulse 140; restless; strength failing; several motions through the day. She expired at 5 o'clock, P. M.; perfectly sensible.

Saturday. The body was opened.—A large quantity of fœtid gas escaped from the cavity of the peritoneum. This membrane was very generally covered with a layer of fibrine, which could, in most places, be pealed off; some yellowish fluid was also effused; but none of the contents of the stomach could be seen. A circular aperture, large enough to admit the end of the little finger, with a smooth edge, and with the surrounding parts of a dark colour, was perceived on the anterior and upper portion of the cardiac half of the stomach. On the interior, a large ulcer was discovered, two inches in length, with smooth edges, and the surrounding parts were greatly thickened, very red, and hard. The rupture occurred at the broadest portion of the ulcer.

For several months previously, this individual had been greatly troubled with dyspepsia; was often observed putting her hand to the pit of the stomach; and was in the habit of relieving her uneasiness "by copious draughts of *hot* water."

References for similar cases, are made to the Ed. Med. and Surg. Jour., Jan. 1824,—to the Revue Med.; Mars, 1824—to Medical Communications, Vol. II. p. 467, for 1790—and to the 8th vol. of these Transactions; in which last, Mr. TRAVERS states the "diagnostic symptoms to be, 1st, sudden, most acute, peculiar, and *unremitting* pain; radiating from the pit of the stomach to the circumference of the trunk, and even to the limbs. 2ndly, Coeval *rigidity of the abdomen*. And 3dly, A *natural pulse* for some hours, until the symptoms of peritonitis begin."

In this case, the pain did remit; the rigidity of the abdomen was not evident; and the pulse was 120 from the first.

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In our first number, at page 139, will be found an account of *the deductions made by* Dr. JOHN BOSTOCK, *from numerous and accurate experiments on the animal fluids during the influence of mercury on the system*. For the details, which are well worthy of perusal, we must refer our readers to his paper in the volume under review.

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Case of Fungus Hœmatodes of the Brain. *By* JOHN HUNTER, Esq. Jr.

THIS is a useful case for the attention of the pathologist, and especially for the inquirer into the healthy and diseased operations of the nervous system.

We have space merely to observe, that the disease, which subsequent dissection manifested to be chiefly seated in the thalami nervorum opticorum, whose texture was entirely converted into the *fungous* substance resembling coagulated blood, produced *various nervous affections and organic alterations, in different and apparently unconnected parts of the system*, and that death resulted, under circumstances of great emaciation and exhaustion, nearly four years after the commencement of head-ach, and two years from the first attack of convulsions.

A new preparation of the Croton Tiglium. By the late J. Pope, Esq.

From numerous experiments, Mr. Pope discovered that the shell of the seed, especially the epidermis, contains the acrid irritating property which forms the principal objection to the use of this oil. This observation is confirmed by the practice in India; where the natives always employ the medulla alone. He was hence induced to prepare an oil from the seeds deprived of their husk and epidermis, which has been found on trial as effectual as the common preparation in evacuating the bowels, without causing any irritation.

The form, however, which he particularly recommends, is the *Alcoholic Tincture* of the seeds. Take of the

Seeds of croton tiglium, carefully deprived of the husk and epidermis, and bruised, two ounces.

Alcohol (sp. grav. 836,) twelve ounces—digest for six days and strain. Dose for an adult, 20 minims.

Croton tiglium is admitted, after ample investigation by eminent veterinary surgeons, to be the best known purgative for horses.

On the Diagnosis of fracture of the neck and upper part of the thigh-bone. By George James Guthrie, Esq.

After noticing the commonly received diagnosis of fracture of the neck of the os femoris, and also of dislocation upwards and backwards, and directly backwards, Mr. G. directs our attention to the state of the foot, as to its eversion or inversion, as indicative of the nature of the accident.

The occasional inversion of the foot in fractures of the neck, was first noticed by Pare, and confirmed by Petit;—it was denied by

Louis, and more lately by Boyer, but Dessault met with it frequently; he averages its frequency as one to four. It is commonly believed that in such cases the fracture must have occurred near the head of the bone, so that the portion of the cervix attached to the trochanter, passed behind the upper portion; or, that the capsular ligament being torn, it passed backwards, behind the acetabulum; in either case, causing an inversion of the great toe.

These notions are contradicted by the fact that the inversion continues after the limb has been restored to its proper length, and also by dissections. Thus Mr. Langstaff mentions a case, in which the toe was first everted, and afterwards turned inwards when the patient began to use the limb. Dissection, in this case, discovered the fracture to have been within the capsular ligament, near the head of the bone, but the lower portion of the cervix had been absorbed.

In a case also in which Mr. White, of the Westminster Hospital, removed the head, neck, and part of the trochanter of the left thigh-bone, for a scrofulous disease of the hip-joint, attended with an abscess, the toes of the shortened limb turn inwards when the patient is at rest on his back, or in motion.

Mr. Guthrie has met with two cases of *inversion*. In the first, it appeared on the second day of the treatment; the lady recovered with lameness, and the foot in a natural position. In the second, a corpulent female, aged 90 years, fell from a high stool on her left hip, and suffered considerable injury. The limb, at the expiration of two days, was shortened more than half an inch, and the toe turned inwards, although less than in dislocation; there was no crepitus. In forty-four days she died, and on dissection there was found a diagonal fracture, extending from the upper and outer part of the trochanter major to the trochanter minor, so as to leave the muscles of rotation, the quadratus, the gemelli, &c. attached to the upper fragment. The glutæus medius retained the two fragments in contact, being inserted into each; the capsular ligament was uninjured; the little trochanter was broken off, and with it the insertion of the psoas and iliacus muscles. There was no attempt at reparation.

From this case he infers, that whenever a fracture occurs, so "as to be external to the insertion of these rotators outwards, yet sufficiently within the insertion of the glutæus medius and minimus, so as not to deprive them of their due action, (as in the above case,) the toe will be turned inwards, and must always be so; or remain without any alteration of position, according to certain variations in the inclination of the fracture, affecting the power of these muscles." The breaking off the little trochanter may have facilitated the inversion of the foot. Is this an essential circumstance in this kind of accident?

On the Effects of Loss of Blood. By MARSHALL HALL, M. D. F. R. S.

THE novelty and importance of the subject here treated, induce us to analyse this paper rather more minutely; although no condensed account can do justice to its accurate author, whose opinions and observations on this point deserve a careful and conscientious examination. The assertion, which we verily believe to be true, *that the obvious effects of a loss of blood, often suggest the idea of increased power and energy of the system, and lead to an erroneous and dangerous employment of the lancet, when a directly opposite treatment is demanded*, should, if verified, be always borne in mind by the medical practitioner.

Dr. HALL treats, first, of the immediate effects of a loss of blood, chiefly syncope, and of the re-action or failure of the vital powers.

He accurately describes the phenomena of syncope, and intimates, that the brain is the organ whose function is first impaired. In profuse hemorrhage, there is, at one moment, a degree of syncope; then a partial recovery, especially if vomiting supervenes. In fatal hemorrhage there is no amelioration; every thing denotes an impaired state of the energies of the brain; although conscientiousness often remains until towards the last, when there is some delirium; and although the voice may be strong, and there be constant restlessness and jactitation. Sometimes, instead of syncope, *convulsions* result from a loss of blood, as has been noticed by Dr. KELLIE,—Ed. Med. Chir. Trans. Vol. I. p. 105; and Dr. ARMSTRONG states, that fatal convulsions have followed bleeding to syncope, in young children. We have seen cases corroborative of these remarks; and in A. COOPER's lectures, by TYRREL, Vol. I. a case is recorded of injury of the head, in which venesection induced convulsions.

From syncope, the system generally *re-acts*. This re-action is sometimes defective; often excessive; or it may be destroyed altogether. It is on the symptoms of excessive re-action after profuse bleedings, that we would wish to fix the attention of our readers.

"The state of excessive re-action is formed gradually, and consists, at first, in forcible beating of the pulse, of the carotids, and of the heart, accompanied by a sense of throbbing in the head, of palpitation of the heart, and eventually perhaps of beating or throbbing in the scrobiculus cordis, and in the course of the aorta. This state of re-action is augmented occasionally by a turbulent dream, mental agitation, or bodily exertion. At other times it is modified by a temporary faintness or syncope. In the more exquisite cases of excessive re-action the symptoms are still more strongly marked. The beating of the temples is now accompanied by a throbbing pain of the head, and the energies and sensibilities of the brain are morbidly augmented. Sometimes there is intolerance of light, but still more frequently, intolerance of noise and disturbances of any kind, requiring stillness to be strictly enjoined, the knockers to be tied, and straw to be strewed along the pavement. The sleep is agitated and disturbed by fearful dreams, and the patient is liable to awake in a state of great hurry of mind, sometimes almost approaching to delirium. In general this is slight, but occasionally severe and even continued. More frequently there are great noises in the head, as of singing, of crackers, of a storm, or of a cataract; in some instances, flashes of light are seen. Sometimes there is a sense of great pressure or tightness in one part or round the head, as if the skull were pressed by an iron nail, or bound by an iron hoop.

"The action of the heart and arteries is morbidly increased, and there occur great palpitation, and visible throbbing of the carotids; and sometimes even of the abdominal aorta, augmented to a still greater degree, by every hurry of mind or exertion of the body; by sudden noises or hurried dreams and wakings. The patient is often greatly alarmed, and impressed with the feeling of approaching dissolution. The state of palpitation and throbbing are apt to change, at different times, into a feeling of syncope. The effect of sleep is in some instances very extraordinary; sometimes palpitation, at other times a degree of syncope, or an overwhelming feeling of dissolution. The pulse varies from 100 to 120 or 130, and is attended with a forcible jerk or bounding of the artery.

"The respiration is apt to be frequent and hurried, and attended with alternate panting and sighing; the movement of expiration is sometimes obviously and singularly blended with a movement communicated by the beat of the heart; the patient requires the smelling-bottle, the fan, and fresh air.

In this state of exhaustion, sudden dissolution has sometimes been the immediate consequence of muscular effort on the part of the patient.

"The phenomena of excessive re-action are mostly observed in young persons of robust constitution, who have been subjected to repeated blood-letting. In infants, in feeble persons, and in rather advanced years, re-action after loss of blood is, for the most part, *defective*. In this case the patient long remains pale, thin, and feeble, and becomes faint on the slightest occasions; the pulse is frequent, but feeble and perhaps irregular, and we look in vain for the throbbing and palpitation observed in the young and robust."

Each of these states of the system, exhaustion with excessive or with deficient re-action, may gradually yield to returning health; or subside into the state of sinking; this last is described in the following manner.

"The sensibilities of the brain subside, and the patient is no longer affected by noise as before. There is, on the contrary, a tendency to dozing, and gradually some of those effects on the muscular system, which denote a diminished sensibility of the brain, supervene, as snoring, stertor, blowing up of the cheeks in breathing, &c. instead of the hurry and alarm on awaking, as observed in the case of excessive re-action. The patient in the state of sinking requires a moment to recollect himself and recover his consciousness, is perhaps affected with slight delirium, forgets the circumstances of his situation, and, inattentive to objects around him, falls again into a state of dozing.

"Not less remarkable is the effect of the state of exhaustion with sinking, on the functions of the lungs. Indeed the very earliest indication of this state is, I believe, a crepitus in respiration, only to be heard at first on the most attentive listening. This crepitus gradually becomes more audible, and passes into slight rattling, heard in the situation of the bronchia and trachea. There is also a degree of labour or oppression in the breathing, inducing acuteness in the nostrils, which are dilated below, and drawn in above the lobes at each inspiration; in some cases there is besides, a peculiar catching laryngal cough, which is especially apt to come on during sleep, awaking the patient. The heart has, at the same time, lost its violent beat and palpitation, and the arteries their bounding or throbbing. The stomach and bowels become disordered and flatulent, and the command over the sphincters is impaired. The last stage of sinking is denoted by a pale and sunk countenance, inquietude, jactitation, delirium, and coldness of the extremities."

The third set of phenomena noticed by Dr. Hall, are the effects of a further loss of blood, in cases of exhaustion.

The symptoms of *exhaustion with re-action*, have often been mistaken for those of *inflammation*, or other disease of the head, or of the heart; and the lancet has been employed by the inexperienced, even with a full relief to all the symptoms by the substitution of syncope. This relief is but temporary; for when the state of faintishness gives way to the rallying and re-action of the vital powers, the apparent benefit of the bleeding disappears.

"Another circumstance, equally interesting and curious, is, that within certain limits the remedy which relieves for a time, eventually only adds to the severity of the malady, which is apt to return after a certain period, in a still more aggravated form. It is natural, indeed, to suppose that, unless where there is a tendency to failure of the vital powers, the re-action of the system and the painful circumstances attending it, would be greater after a third or fourth loss of blood, than after a first or second. Indeed there are seldom symptoms of re-action after one flow of blood, however great or profuse. The repetition or protraction of the cause is essential to produce this effect. It is observable, too, that in cases of exhaustion with re-action, syncope is very soon produced by the further loss of blood. This fact is of importance, because it may be regarded as a *sign* of the state of exhaustion when obscured by the re-action of the system, and as a warning voice against the further and inconsiderate use of the lancet.

"If the loss of blood be repeated still further, not only syncope, but a state of sinking is induced; the effects of re-action are, of course, in this case, permanently relieved; whilst a different series of phenomena, already fully described, is established. This transition of re-action into sinking, may either be spontaneous, or it may be the effect of a last bleeding, the state of syncope scarcely ceasing, with a total though gradual failure of the vital powers."

These effects of the loss of blood are influenced by various circumstances. Re-action is usually proportionate to the degree of *strength*; hence, in infants, in old people, &c. there is *defective re-action;* with them a state of syncope is a state of danger, and a second or third bleeding is borne with difficulty. Certain *states of disease*, have also an important influence.

"And I must, in this place, particularly remark, that the state of intestinal irritation leads to those effects of blood-letting which I have described as exhaustion; whilst inflammation seems to protect the system from the effects of loss of blood. In the former case, throbbing is soon induced, unless indeed it be prevented by a state more nearly allied to syncope; in the latter, blood-letting is followed by little of re-action until the state of inflammation be subdued, and the system freely exposed to the uncontrolled influence of loss of blood. In the former, there is danger from full depletion; in the latter, this measure is providentially not less safe than necessary."

Dr. Hall concludes his valuable paper, by alluding to the effects of the loss of blood on the internal organs; on which, and on the *remedies* suitable for the several states of the system above described, we may expect some further communication, resulting from a series of experimental investigations.

Case of Carotid Aneurism—successfully treated by tying the artery above the tumour. By James Wardrop, Esq.

This method of operating for aneurism was originally suggested by Dessault, in cases where the common method is inapplicable. He was led to it by reflecting on the manner in which aneurismal tumours are cured by a spontaneous or artificial obstruction of the affected artery, followed by a coagulation of the blood in the sac, and its subsequent absorption. This obstruction, he imagined, might be made with as much advantage beyond the tumour, as between it and the heart; for in either case, the circulation would be arrested in the vessel operated on.—"The only circumstance which must be considered as indispensable to the success of this mode of operating is, that there be no vessel arising, either from the sac itself, or from the artery between the sac and the ligature, *sufficiently large* to keep up the circulation of the blood through these parts, and thus prevent its coagulation." We may observe, that as it would be impossible to ascertain before an operation, whether such collateral branches existed or not, this suggestion ought never to be enforced where the common operation is practicable. In other cases it promises to be very useful.

The operation of Dessault has been executed but three times; the first was for a femoral aneurism by Deschamps; the second for an iliac aneurism by Sir A. Cooper; in both of these with an unfavourable result; the third, and the only successful one, is now presented to the profession by Mr. Wardrop.

"A lady, 75 years of age, after a very violent fit of coughing, perceived a swelling on the right side of her neck, a little above the clavicle. When I saw her eight days afterwards, the tumour had all the characters of an aneurism of the carotid artery, and had become as large as a fist; but was so situated that it was quite impracticable to tie the vessel below the tumour, so closely did it come in contact with the clavicle. The tumour continued to increase in size, and on the eleventh day after it was first observed, it had acquired a formidable aspect, the scapular portion having become very red and painful, the pulsation, which was very strong throughout the whole swelling, being here particularly so, and the parietes feeling extremely thin, and as if ready to burst."

The operation was performed by making an incision on the tracheal edge of the mastoid muscle, and passing a single ligature under the artery before its bifurcation. The consequences of the operation are thus detailed:

"There was an immediate decrease in the bulk of the tumour; marked by a considerable corrugation of the skin at its base, as well as a diminution of its redness. The ligature of the artery did not seem to produce any change in the mental functions, or any unnatural feelings in the head; on the contrary, the patient passed the night after the operation more comfortably than that previous to it, the tumour being accompanied with less uneasiness.

A progressive diminution in the bulk of the aneurism, and in the strength of its pulsations took place, so that on the fourth day after the operation it seemed to have diminished nearly one third in its bulk; the upper and tracheal portions had lost all pulsation, and only the scapular portion retained an obscure undulatory thrill. The integuments, which had lost their redness, now evidently became more inflamed, and during the fifth and sixth days there was a distinct increase in the size of the tumour, and it pulsated more strongly, which seemed partly owing to several severe fits of coughing. This apparently unfavourable change was, however, followed by a decided amendment; and eight days after the operation the swelling again began to diminish, and the pulsation became more obscure, so that on the fourteenth day it was not much larger than half its bulk at the time of the operation, and no pulsation could be detected in any portion of it; merely a slight vibration in some parts, which seemed to be produced by the pulsations of the contiguous vessels, which were now enlarged, particularly the inferior thyroid artery.

The redness of the skin, however, continued to increase, and that of the scapular portion of the tumour to become more and more of a purple colour, till at last, ulceration commenced on the most prominent part. Several considerable-sized portions of coagulated blood were discharged along with some healthy pus through the ulcerated opening; and on the 20th day after the operation, the ulceration of the integuments had closed, and nothing of the tumour remained, but some wrinkling of the skin, and a considerable degree of thickening of those parts on which the base of the tumour had rested. These continued to diminish, and at the end of the fifth week, from the time of the operation, the neck had nearly resumed its natural form, a slight degree of inequality only remaining; the ligature had come away, and the patient's general health, to the management of which the greatest care had been bestowed, appeared now to be completely re-established."

Case of Hydrophobia. By George Gregory, M. D.

In this instance a man, aged 28 years, was bitten on the 2nd or 3d of May, 1825, by a dog apparently healthy. On Friday, the 10th of June, about thirty-nine days after the accident, the symptoms of this terrible malady appeared, and rapidly increasing in violence, proved fatal on the following Tuesday. The symptoms were those of great nervous irritability and agitation, with soreness of the throat; occasional dyspnœa with a sense of suffocation; dread of water and of a current of air; great difficulty of deglutition; and finally convulsions.

Dissection on Wednesday, June 15th.

"The spinal marrow throughout its whole extent was perfectly free of disease. There was some slight effusion of serum on the surface of the brain, and about three or four tea-spoonfuls of serum were contained within the ventricles. The choroid plexus was turgid with blood, and two very small soft tumours were found attached to it.

The stomach and bowels were in a healthy state. The lungs were of a remarkably dark colour, as if gorged with venous blood. The whole body, it may be noticed, had become livid with remarkable rapidity, and to a very uncommon extent.

The pharynx, epiglottis, and larynx—the œsophagus, for about the first three inches of its course—and the trachea, throughout its whole extent, appeared internally of a coffee-ground colour, or almost black. This blackness remained after the parts had been freely sponged. There was no thickening or swelling of the parts about the glottis. The structures were firm, nor could I detect any breach of surface in the affected membrane. I have since been informed, however, that an abrasion of the cuticular lining of the membrane was noticed about half an inch below the pharynx.

The inner coat of the aorta, and large arteries immediately proceeding from it was of a bright scarlet colour. The heart and pericardium were healthy.

In some concluding observations, Dr. Gregory delivers the following opinion of the nature of the disease.

"Fully sensible as I am that a high degree of nervous irritation is the predominant feature of the symptoms during life, and that the appearances which present themselves after death (as hitherto observed) possess no common character, yet it is impossible, I think, in any reasonings concerning this particular case, to avoid associating together the *sore-throat* which characterized its early period, the *dread of water* which indicated its confirmed stage, and the peculiar appearance about the *throat*, which were demonstrated upon dissection. These phenomena tend to the conclusion that the symptom which gives name to the disease, is directly dependent upon some form of inflammatory action in the larynx and pharynx, and that the true nosological situation of hydrophobia is in the genus cynanche."

The concluding paper of the volume is interesting, as *five cases of Hydrophobia, caused by the bite of a wild Jackal in a rabid state, are detailed by* M. Hewitt, Esq. of the Bombay Establishment, in the East-Indies.

These cases occurred about a month after the individuals were bitten, and in all of them the symptoms were very similar. "The affection of the glottis was always predominant, and next that of the pit of the stomach. Deglutition was always much dreaded and difficult; and great mental anxiety was present."

Four out of the five individuals affected died, but unfortunately no account is given of the post mortem appearances. The patient who survived, was apparently saved by the early and free employment of *mercury*, internally and externally, by which a copious salivation was induced. This plan was tried in the fifth case, but made no impression on the system, probably from the disease being too far advanced.

Article XIV.—*Histoire Naturelle et Medicale des Sangsues, contenant la description anatomique des organes de la Sangsue officinale, avec des considerations physiologiques sur ces organes, des notions tres étendues sur la conservation domestique de ce ver, sa reproduction, ses maladies, son application, &c. &c.* Par J. L. Derheims, Pharmacien, Chemiste, &c. avec six Planches. Paris, 1825, 8vo. pp. 165.

We are induced by the unaccountable and blame-worthy neglect with which one of the most important therapeutical agents has been treated in this country, to notice the work of Mr. Derheims, the title of which stands at the head of this article. With an abundant supply of leeches in the ponds and streams of the United States, we may well feel a sort of astonishment at the circumstance of the general disregard of their sanative powers, which in Europe, are already looked upon as among the most efficient and decided of all the resources of the physician. We may say the general disregard, for while we are ignorant of the extent to which they may be employed in Boston, and the other cities and towns of New England, we are informed, that they are comparatively overlooked in New York, since that city is principally dependent on a foreign supply, which has never been very abundant, and is, moreover, furnished at a very considerable expense. We shall not err, if we say that in the southern cities and towns, the use of the leech is almost never resorted to in the treatment of disease.

In Philadelphia, the supply of indigenous leeches is fully equal to the demands of the profession, and may be stated at about 150,000 per annum. The "leechers and bleeders," of this city, generally have on hand a sufficient number during both winter and summer; though in dry seasons, they are more scarce than in others, which are favourable for the business of collecting them. We know that one gentleman, whose skill in their domestic preservation and their medicinal application, has given him a justly merited distinction in this business, procures about 30,000 of these animals in each year, and as many other persons keep them always on hand, some to the amount of 10,000 per annum; we suppose that our statement of 150,000 is nearly correct. In the hands of such as are very skilful, many of these can be made to act a second or third, and even a fifth or sixth time. Hence it is evident, that the medicinal application of the leech, is a very familiar practice in Philadelphia.

We are unable to state the price at which leeches are sold in Paris. Twelve or fifteen months since, two persons arrived in New York, bringing with them for sale, about 20,000 of these animals, and we heard that some of them were offered here at forty cents a piece, which being refused, they were subsequently re-shipped to Havanna. In London, the leech when applied, sometimes cost a guinea for each one.* In Philadelphia, the charge for a leeching, is from two to three dollars, when from 12 to 40 or 50 of them are employed; a larger number cost a higher price, though we have seen 60 or 70 applied for three dollars.

We are informed, that there is no professed leecher in Baltimore, and that a very skilful person who settled there not long since, was obliged to return here, for want of patronage in that line of business. One of us resided six years in a southern city, with a population of 6 or 7000 souls; and he believes, that during the whole of that period, though there was a vast amount of medical practice, not one single leech was employed.

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* Vide Dict. des Sc. Med. Article Sangsue, p. 527.

If the revolution in medical principles and practice, which has found so many supporters in France, and which begins to extend itself in this country, should meet with further support and favour here, the consumption of these animals must become more considerable and general, every where through our widely extended territories. That doctrine has had a great effect in increasing their sale in France, as we are informed by Mr. DERHEIMS, who says that

> "Leeches in becoming one of the most powerful arms of a medical doctrine, have also become the source of a very considerable trade,—no one is ignorant of the numbers of these animals which are employed in France for some years past,[*] or of the no less considerable amount of them annually exported." p. 72.

We receive some in this country from France, Spain, Portugal, and Italy, but our best leechers are satisfied with those of our own waters, and find that they, in general, answer nearly as well as the foreign sorts, and can be afforded much cheaper. Forty leeches at forty cents each, would amount to sixteen dollars. If, besides this, we consider the risk of disease and death which *frequently* follows their gorged state, we may conceive that they could not be sold by our leechers at less than sixty cents each, and twenty of them could hardly be applied for less than ten dollars; the loss by death is so very great. Twenty French leeches might take about ℥xx. of blood—our own do not take so much; but from vascular parts of the skin, the bleeding by them is often very free. Mr. RIPPERGER measured on one occasion ℥xxiij. of blood which flowed from seventeen bites, made by American specimens: probably hirudo decora.[†] This is an extreme case, for the majority of them take from two to three drachms each, which is usually considered in the prescription for their employment.

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[*] Mr. MERAT, in the article Sangsue Dict. des Sci. Med., says that the accounts of the Parisian Hospitals, show an annual consumption of several hundred thousands.

[†] H. Decora, (decorata) of Long's 2nd Exped. v. 2. 268.

Mr. Derheims states, that a middling sized officinal French leech, weighing about one drachm, will abstract upwards of seven drachms (30 grammes) of blood.

It has been commonly supposed that only two sorts are employed in practice, to wit, the officinal and the black leech,* but Mr. Derheims asserts, that many other sorts are constantly used and sold in France. He gives the following list of useful sorts:

1 Hirudo Officinalis, 2 do. Sanguisuga, 3 do. Octoculata, 4 do. Complanata, 5 do. Stagnorum, 6 do. Geometra, 7 do. Swampina, 8 do. Muricata, 9 do. Alpina.

Of all these he gives some description, but of none so fully as of the officinal species.

> "The form of this endo-branchial worm may be considered, says he, in two different states; when contracted it presents a body almost ovoid, when elongated the body is flattened; in its maximum state of elongation it becomes a cylindrical tube, the head of which can, with difficulty, be distinguished from the posterior extremity. The back of the officinal leech is black, with yellow rays, the belly yellowish, spotted with black. These parts are clearly defined, the first being almost plane, the second convex; each extremity is furnished with a cup, (ventouse,) the functions of both of which shall be examined. Finally, considered as a whole, the animal is a protractile tube, formed by the union of a number of rings, sheathed in a common envelope, and lined with a mucous substance, which may be regarded as a peculiar matter proper to the leech." p. 11.

The natural habitation of this kind he supposes to be pure still waters, as fresh ponds, for they reside there in great quantities; and if they are sometimes found in running streams, it is rather accidental than natural for them. 12.

Though they are denominated aquatic worms, water should not be considered as essential to their existence, for they live a long time in moist ground or mud, or in moss, impregnated with water. We have seen a proof of the propriety of this remark in a reservoir of these animals, containing several thousands, and consisting only of a humid earth, mixed with rushes and moss, in which they burrow like earth worms, and are dug out for use. Mr. Derheims says, they frequently perish if deprived entirely of earth; whence he infers, that water serves to maintain their suppleness, by keeping the mucus with which they are invested, of a proper consistence, and a due condition of which is essential for their health and existence. The officinal sort is rarely met in company with other species. The hirudo sanguisuga is occasionally met with it, but not in considerable quantity. Both kinds leave the streams and ponds, to crawl over the damp meadows, and sometimes in stony places, where they attach themselves to the udders of cows, and the genitals of the horse—they also suck toads and snails, and even each other. These expeditions are generally made after sunset, and principally by the officinal leech. 13—14.

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* Vide Parr's Med. Dict. and Dict. des S. Med.

> "The black leech H. Sanguisuga is long, of a greenish black colour, spotted with deep black, the belly is entirely black, the lateral lines yellow; it is more protractile, and less contractile than the officinal sort. Its back is flatter—it inhabits ponds and still waters, and was formerly considered poisonous, an opinion which we shall presently refute." 19.

This is the leech which is called by PARR the horse leech; but Mr. D. does not agree with him that it should be so called. He says that some years since the hirudo officinalis only, was employed in medicine: the scarcity of the species has now dissipated the vulgar prejudice, that the other sorts are poisonous, and at present, an indiscriminate use is made of the complanata, octoculata, and even sanguisuga; they are all sold either in common with the officinal species, or alone, at a lower price, for the latter will always merit a preference.

Our limits will not permit us to follow Mr. D. through all his observations on the senses of these worms, some of which they possess in a high degree; neither can we trace with him their anatomical structure, their diseases, and mode of reproduction; we shall proceed therefore to topics of more immediate importance.

> "It is true, says he, in accounting for some embarrassments in their use, that the application of the leech is often confided to improper persons, who are strangers to any surgical knowledge, and that squeezed in the callous skin of their fingers, they suffer much distress, and refuse to take hold; but this is not the only cause of their refusal to bite; the neglect of attention to cleanliness of the skin on which they are placed, contributes a great deal to this refusal. We know enough of the nature of the perspiration, to allow the supposition that it exerts a very decided chemical action, on the nervous papillæ of the leech's mouth. The condition of the animal ought also to be considered, for it is sometimes in a state wholly unfit for suction." p. 122.

This unfitness results from the loss of its teeth, in the manner to be hereafter shown, and to its being preserved when already gorged by the improper bait which has been used in catching it, &c.

Complaints were laid before the French police on the subject of these embarrassments, and disappointments; a committee of the Royal Academy consisting of M.M. PELLETIER and HUZARD fils, was appointed on the following questions.

> "Why are the wounds made by leeches sometimes poisonous? and 2nd, Why do leeches sometimes refuse to attach themselves to the skin? Their report, which was adopted, contained the following conclusions:—1st, If the wound produced by the leech ever becomes poisoned, it is owing to the constitution of the patient, or nature of the disease. 2nd, If leeches when applied, refuse to attach themselves to the skin, it is owing to their having lost their teeth." 123.

The officinal leech has three teeth, which may be seen within the upper disc or cup. These are sharp and tolerably stiff, and attached to a sort of circular basis, from which they are easily torn off, by pulling away the animal when it is in the act of suction. These teeth penetrate the skin vertically, and swell when inserted, so that they are sure to be left in the wounds, if any force is used to pull them off. 124.

Mr. DERHEIMS has tried this experiment, and found such to be the result; which, besides occasioning inflammation by the presence of an extraneous body, causes the destruction of the worm, as far as any future employment of it is concerned; such a leech could never bite again. Mr. DERHEIMS, from his anatomical investigations, is led to believe, that the leech cannot feed except with its teeth *inserted* into the substance it feeds on; and therefore the custom of smearing the surface to be bled, with sugar and water, or blood, is useless, as far as any baiting or quickening of the appetite is intended. The only benefit of this practice, consists in the increased facility of glueing the disc or cup, to the surface, which allows the suction to be more complete, on smooth and moist surfaces. Sugar and water answer very well for this purpose, but cream, or any unctuous matter disgusts them. 126.

The most certain method of causing them to bite is to soften the skin, and clear it completely of all perspirable matters; for this purpose a solution of soap should be used, and followed by plenty of tepid water, after which the skin should be wiped dry with fine soft linen. The leeches should be of a medium size, and well selected; the largest ones are often without teeth. They should be taken out of the water sometime beforehand, not, as vulgarly supposed, to make them disgorge, but in order to accustom them somewhat to the influence of the air, and even to the temperature of the patient's apartment.

When voracious, they may be applied to the part by being held slightly in the fingers, one by one, but very tenderly. Or they may be put in a glass goblet, covered all except one edge with a piece of linen, and the whole applied close on the spot to be bled. As they will not stick to the polished glass, or to linen, they are in some measure forced to attach themselves as the surgeon pleases to the skin. With good leeches this method is almost infallible. 127.

Where the patient's skin is very hot, he recommends that they should be brought to a temperature of about 88°, by means of tepid water poured over them. 128.

When they are to be applied to the anus, great care must be taken to have the part washed very clean, and rendered soft by warm water. Sometimes the hair disturbs them, and it should, therefore, in such cases, be shaved off from the part. 132.

While sucking, especial care should be used not to touch or disturb them, or they will immediately let go; neither should the patient be placed too near the fire, as any considerable warmth makes them fall off. 133.

They should always be allowed to fall off of their own accord. The bad effects of forcibly abstracting them, or of cutting them in two, or using any stimulating applications, have been referred to. 135.

Such as fall off spontaneously, may be used a second time, for they remain possessed of their teeth: they should be put in a weak solution of salt in water, to make them discharge the blood they have ingorged. Some leeches which have been carefully disgorged, have been employed six or seven times equally well. 136. In this country oftener.

Mr. Derheims does not approve of the practice of cutting off the lower extremity of the leech, while in the act of sucking, because in a majority of cases it will immediately drop off: but, we are informed by Dr. Richie of this city, that when he resided at the Pennsylvania Hospital, he commonly practised this method, whereby the leech emptying itself as fast as it drew the blood, continued its suction until it was taken off by the operator. Where the animals are scarce, such a practice is of great value and importance.

In catching leeches, the best, and safest method is to take them by hand, but as this is not always practicable, a net may be used, consisting of a coarse hair cloth stitched on a wooden circle, with sinkers of lead fastened on at proper distances apart; the net is then secured by a number of strings, so as to hang at the end of a convenient sized fishing pole. This instrument carried into the water in an oblique direction, may be passed under the leeches, which are thus taken without injury. They should then be put into jars containing a sufficient quantity of wetted moss (sphagnum.) They are also taken in France by means of pieces of calves liver thrown into the pools, to which the animals come and attach themselves, but such as are thus taken, are not so good, being already gorged by the bait. 74.

They are commonly carried for sale in earthen jars, or little casks, or runlets of wood, or in hair cloth bags, always however, accompanied with moss, well moistened; or small bits of sponge, as when sent for sale beyond sea. 76.

Leeches sometimes keep very well, but on other occasions they perish in great numbers, for besides the atmospheric changes to which they are very sensible, they are subject to several diseases not dependent on this cause. 77.

The first thing to be observed in regard to their domestic preservation, is not to interfere too much with their locomotion. Too many are commonly crowded together in small jars, a circumstance which contributes a great deal to their destruction. When obliged, however, to keep them crowded together in this manner, the water should be frequently changed, using great care not to wound them. On these occasions they should be cleansed of the mucus which adheres to them; without being freed from this mucus, no leeches can be healthy, and hence the value of the moss so often spoken of, by crawling over and through which, they are able to disembarrass themselves. They should not be covered with too thick a cloth. 78. The dead ones should be carefully removed, always. Mr. Derheims gives very abundant and satisfactory details of the method adopted for preserving them in large quantities, but we have not space enough to permit the exposition of this interesting information here.

It sometimes happens that an epidemic disease appears in the reservoirs of leeches, on which occasion they perish in vast numbers. In general it is best under these circumstances, to place a quantity of charcoal in the water wherein they are kept, in order to disinfect it. For this purpose let the bottom of the reservoir be covered with small bits of charcoal, which may be kept down by covering it with a layer of moss, over which a number of pebbles should be strewed. When considerable numbers are sick, let them be well washed in several waters, then be placed in a separate wide mouthed vessel and covered with powdered charcoal; after being left in this state three or four hours, water may be freely added; they are next to be lifted carefully out, exposed to the air for a few minutes, and then may be safely committed to their cleansed habitations floored with charcoal, moss, and pebbles, as above. 99.

As a proof of the disinfecting power of charcoal used in this way, Mr. D. informs us that not long since, a dealer wrote to him from England, that for two weeks past she had lost from 150 to 200 per diem, out of a reservoir which originally held 10,000; while from another, containing 20,000, she lost only a few each day. Mr. D. advised her to place the sickly ones for a few hours in a small quantity of water, and to cover them with pounded charcoal, after which she was to wash them in several waters. This was punctually executed; the next day only nine died, and three on the following day. His account of the use of charcoal is very interesting.

We must again express our regret that our prescribed limits do not permit a larger extraction from Mr. D's treatise. The facility with which the leech may be procured and preserved and applied, together with the immensely beneficial results of its frequent employment in medicine, induce us to hope that the reproach of neglecting it, may not much longer be justly urged against our American brethren. If our Journal could exert any influence in establishing the practice in this country, we should consider it as meriting all praise for so important a service to the profession. In the mean time, we beg leave to urge on the friends of medical improvements, the propriety of shaking off this long and strange apathy in regard to the employment of the genus hirudo. If it be objected that the preservation and application be troublesome, we can only answer that the life of the physician is necessarily one of toil, privation and self denial, but the duty of seizing every opportunity of doing good is paramount to all considerations of personal convenience. It is in vain that the exculpatory argument is urged, that the cup and scarificator are powerful agents; we admit that in many cases they are preferable to the leech, but in a vast number of instances there is no succedaneum for these useful animals, no efficient practice without them. The facility with which they can be transported by land or water, will enable practitioners, who do not choose to take the trouble of causing them to be collected in their own neighbourhood, to procure them in this city and New York, which we presume would be easily effected by applications made to the druggists. A leecher here says that he selected one hundred specimens, out of about 500, which having been rejected at the Pennsylvania Hospital, were apparently in a dying state, and applied them 8 or 9 times in succession, whereby he received a considerable profit. A small supply, which should be *carefully* attended to, by changing their waters frequently, and allowing them some sponge or wet moss to clear off the mucus with, would last a considerable time, though as before stated, many of them perish in consequence of being gorged.

We shall here take leave of the subject for the present, in hopes of being enabled on a future occasion, to press the arguments for their more enlarged introduction and employment in the practice of physic and surgery.

MEDICAL LITERATURE.

RETROSPECTIVE REVIEW.

ARTICLE XV.—*A concise exposition of the Physiological and Pathological Doctrines of* THEOPHILUS BORDEU, M. D.

WE conceive that in offering to our readers a concise exposition of some of the principal doctrines, which, at different epochs of the art, have reigned in the schools of medicine, we shall occupy the space devoted, in this Journal, to Medical Literature, to real advantage. In this way we shall afford to those of our readers, who have not access to such works as contain the development of these doctrines, or who do not enjoy leisure, or possess the disposition, to consult ponderous tomes, and wade through a mass of rubbish in order to pick up a solitary gem, an opportunity of becoming acquainted, without much trouble, with what is of more utility than is generally admitted to be—the history of their profession.

Impelled by these considerations, we intend, in the present and subsequent numbers, to devote a few pages to an exposition of the physiological and pathological views of THEOPHILUS BORDEU, who ranks conspicuously among the medical philosophers of France. To such of our readers as are already familiar with French medical literature, the selection of this writer, at the present moment, will appear particularly judicious;—as in him we discover the original founder, as it were, of a doctrine, which, being ably developed and warmly defended by the present pathologists of France, has greatly contributed to establish their reputation, and is enlisting daily many proselytes in Europe and this country.

With the strictest propriety, BORDEU may be regarded as among the first who made a proper use of anatomical knowledge,—leading the way to BICHAT in the study of tissues,—investigating carefully the functions of parts in a state of health, and applying this physiological knowledge to the study of the morbid conditions of our organs. That we do not bestow unmerited praise, in these many respects, on BORDEU, we hope to be able to show in the course of this article; and were it necessary, we might strengthen our position by adducing the testimony of BROUSSAIS himself, whose labours, no one can deny, have contributed more towards the advancement of what, notwithstanding the assertions and sneers of some physicians, may be called physiological pathology, than those of any of the successors of BORDEU.

This celebrated man was born in the South of France, in the year 1722, and after completing his academical studies at Pau and Lescar, repaired to Montpellier, in order to prosecute the acquisition of medical knowledge. The period at which BORDEU commenced his new studies in the far famed school of Montpellier, is not the least brilliant in the annals of our profession,—from the celebrity of the writers, who had already left the world, but were still occupying with their doctrines the attention of the profession, as well as from the renown of many still living. It was, indeed, a period when the inquisitive and ardent mind found many subjects well calculated to elicit his efforts in the cause of science and truth; as well as remarkable for the zeal and activity with which laborious researches were conducted. The truth of this will appear if we recall to the mind, that VAN HELMONT had already pointed out the relation existing between the various organs; and more particularly the great influence of the epigastric centre; not many years had elapsed since STALH had shown the insufficiency of physical and chemical explanations of the functions of life, and of the phenomena of disease;—the great BOERHAAVE had in part introduced his mixed theories, and counted many supporters among the professors of Montpellier;—WILLIS had directed the attention of physiologists to the importance of the nervous system, and HALLER was already filling Europe with his justly merited fame. Such was the period at which BORDEU arrived at Montpellier. Not a long time had elapsed before he assumed an elevated place among his fellow students;—gaining considerable reputation for originality of mind, and closeness of application. So early as 1742 he was honoured with the title of Bachelor of Medicine; on which occasion he defended a thesis on sensibility, in which may be discovered the rudiments of his subsequent views. The succeeding year he received the doctorate, and after spending one year at Pau, and two at Montpellier, proceeded to Paris, where he applied himself with the closest assiduity to clinical observations, both in private practice and in the public institutions of that metropolis.

In 1749 he was appointed superintendant of the mineral waters of Aquitaine. After fulfilling, several years, the duties of this appointment, and spending some time in his native country, where he publicly taught anatomy and midwifery; he returned to Paris in 1752, and soon after presented, to the medical world, his celebrated work on the glands. It was during his residence in Paris that he became intimately acquainted with LACAZE and VENEL, who afterwards distinguished himself as a professor at Montpellier, and in conjunction with them composed several works. Shortly after, he was named expectant physician of La Charité, and soon published his work on the pulse, which, for a long time, attracted the attention of physicians.

It is from the period of the publication of these works, that we may date the celebrity of BORDEU; for although his thesis on sensibility, his article *crise* contained in the Encyclopedia, and several essays sent to the Academies of Sciences and Surgery, had already placed him conspicuously among the physiologists and anatomists of the day, it was not until now, that he reaped the full reward to which his zeal, industry and learning, so justly entitled him.

Our limits not allowing us to examine the particulars of his life, and more especially to detail all the persecutions he subsequently encountered from his colleagues; or recapitulate all the conjectures that have been advanced, at various times, to account for their alleged causes; we can only remark, that were we inclined to engage in such an inquiry, we might, perhaps, trace their source, in great measure, to those opinions he so eloquently enforced, and which clashed so greatly with those long defended, and fondly cherished by a THIERRY, a BOUVARD, and other medical antiquarians of that period; and partly, also, to the caustic and satirical turn of his mind. Be this, however, as it may, he lived sufficiently long to surmount all the difficulties he thus encountered, and to enjoy a reputation, almost unexampled, for skill and learning.

After suffering, in a greater or less degree, for several years, from irregular gout, BORDEU retired to bed on the 23d of November 1776, and was next day found dead in his bed.

As will appear from the subjoined note,* the works of BORDEU, which are now to form the subject of our subsequent remarks, are very numerous. As we could not attain, satisfactorily, our present object by noticing them in the order of their publication, or even by offering a separate analytical review of each, we shall content ourselves with drawing from them indiscriminately, and arranging our extracts and observations in the best order possible.

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* Dissertatio physiologica de sensu genericè consideratio. Montpellier, 1742. 4to. 2nd. Chylificationis historia. Montpellier 1742. 4to. 3d. Lettres sur les eaux minérales du Bearn, et de quelques unes des provinces voisines. Amsterdam, 1746—1748. 12mo. 4th. Observations sur l'usage

We commence with **Bordeu's** sentiments on *Man*, viewed as a fit object for medicine. This subject will be found fully developed in many of his writings, though more particularly in his work on chronic diseases.

Man, he remarks, is a compound of various organs,—each of which, during life, has a movement, an action, a life peculiar to it, and acts and feels in a greater or less degree at certain periods, and enjoys a state of repose, at others.

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du quinquina dans la gangrene. 5th. Memoire sur les articulations des os de la face, in the memoires de l'Academie des Sciences. 6th. Recherches anatomiques sur les differentes positions des glandes, et sur leur action. Paris 1752. 7th. Dissertation sur les écrouelles. In the memoirs of the Academy of Surgery. 8th. An omnes organicœ corporis partes digestioni opitulentur? quæstio medica. 1753. 9th. An venatio cœteris, exercitationibus salubrior? affirm. Paris 1753. 10. Utrum Aquitaniæ minerales aquæ morbis chronicis. quæstio medica, 1754. 11th. Recherches sur les crises. In the Encyclopedia 1753. 12th. Recherches sur le pouls par rapport aux crises. Paris 1756. 13th. Recherches sur le traitement de la colique metallique à l'hospital de la charité, pour servir a l'histoire de la colique vulgairement appelée colique de Poitou, 1762—1765. 14th. Recherches sur quelques points d'histoire de la medecine qui peuvent avoir rapport à l'arret de la grand' chambre du Parlement de Paris, concernant l'inoculation, et qui paraissent favorable à la tolerance de cette operation. Paris 1762. 2 vol. 15th. Recherches sur le tissue muqueux et l'organe cellulaire et sur quelques maladies de la poitrine. Paris 1767. 16th. Recherches sur les maladies chroniques, leur rapports avec les maladies agues, leurs periodes, leur nature, et sur la manière dont on les traite aux eaux minerales de Bareges, et les autres sources de l'Aquitaine, Paris, 1st vol. 1775.

With the exception of the three dissertations we have numbered 8, 9, 10, and the letters on the medical springs of Bearn, **Bordeu's** works were republished in 1818, by professor **Richerand** of Paris, in two volumes, 8vo.

Besides these several works, **Bordeu** is thought to have written the following, which were published under the name of **La Caze**. It is perfectly well known, at least, that he furnished the principal part of the materials.

Specimen novi medicinæ conspectus. Paris 1749—1751. Idée de l'homme physique et moral, pour servir d' introduction à un traité de médecine. Paris 1755. Institutiones medicæ ex novo medicinæ conspectus. Paris 1755. Extrait raisonné du traité de l'homme physique et moral et des institutions medicales, Paris 1758.

In the present article we shall draw indiscriminately from all these works.

The general life is only the result or the compound of all the separate organic lives,—depending on the concourse and on the determinate and moderate order of the movements, agreeably to which the particular functions or lives are executed. After illustrating this position by the comparison of a large number of bees grouped together in the shape of a ball,—each of which, however, has its life separate, he remarks that all the organs of the body are linked together, each possessing, however, its district and action; and that the relation of these actions—the harmony resulting from them, constitutes *health*. If this harmony becomes deranged, either owing to the debility of one organ, or to the action of one organ becoming greater than that of its antagonist;—if the actions are reversed, and do not follow their natural order; these derangements constitute *disease*, which, in proportion to the degree of their intensity, is more or less violent.

Each age and each sex has a peculiar order assigned to its functions. Each individual, indeed possesses a life peculiar to himself. Perfect health is a mere ideal and metaphysical being, seldom or never to be found. The health or peculiar life of each individual, becomes more or less removed from perfect health, in proportion to the greater or less activity, or debility of the function of some organ. From this circumstance the various temperaments, or rather the various habitual determinations in the functions of the animal, originate. Thus, sometimes the liver, at other times the stomach, brain or organs of the corporeal faculties, predominate over the other organs; the various combinations resulting from these changes, constituting the differences in the temperaments of various individuals.

Each individual then has a character distinct from that of every other; but there are, in him, some organs whose functions are common to all, and must be regarded as the agents and supporters of life. These functions are those of the brain and nerves,—of the heart,—of the respiratory and digestive organs. The most essential are the brain, heart and stomach, which may be regarded as the triumvirate of the human machine;—the true supporters of life. These organs constitute so many centres, from, and towards which, all actions and efforts necessary to the various functions of the body, originate or are directed. These functions are linked to each other in an admirable manner; and all depend on the influence or action of the nervous, animal, or sensitive fibre, variously distributed, supported or excited, in the different parts.

But if these fibres originate in the brain, and are therefore continually called into action through the agency of the functions of the soul, or of external causes acting on the organs of sense, they likewise find causes of excitement in the stomach and appendages, which are continually shook by the movements of respiration; by the effects of digestion,and the passions; and by all corporeal efforts. These fibres are moreover excited by causes originating in the uterus in women, and, in a word, in all the viscera, the movements and sensations of which are communicated to them by these fibres. Finally the stomach and the neighbouring organs, such as the diaphragm and intestines, appear to be a centre or reservoir of actions, which in all our corporeal functions, or even in some under the dependance of the soul, extend from this centre to all parts of the body, or else assemble or concentrate into it, producing those striking impressions, of which the physician daily finds examples in practice.

Our nervous and sensible women, he says, who are attentive to all that passes within them, make every day, on this subject, the most acute remarks. There are few of them who could not prove, that one of the seats of the passions, and even of our corporeal efforts, is towards the pit of the stomach and towards the heart. They would express themselves more clearly than the ancient philosopher, who, in order to prove the above position, asserted that in pronouncing the word *me*, *I*, *or ego*, it is necessary to incline the head downwards, in order to indicate, by this movement, the seat of the soul. From this it follows, therefore, that the nervous fibres have two principal sources, the brain, and the middle portions of the body, comprising the heart, stomach, diaphragm and intestines. These two sources appear to be in a perpetual state of antagonism, by which the functions are kept in constant activity. This takes place the more readily, as these functions are merely extensions of the action, originating in these two centres, and proceeding through the nerves to the extremities. But as the essence of the life of the animal body, consists in a sort of motion and sensation, or in a disposition towards these two properties, it is necessary that each vital function should be intermixed with motion and sensation;—and experience teaches us, that such is indeed the case. There are functions in which sensibility predominates; and over which the soul united to the living body, exercises by its action on this latter, the greatest influence. Others, on the contrary, seem to depend merely on the purely *vital sensibility*, without any evident participation of the soul. "The same observation may be made by directing our attention to these functions characterized by motion. In some it is very sensible, and under the control of the soul. In others, also sensible, but apparently independent of the soul; others again exist in which motion is scarcely perceptible. These combinations of *evident* motions and sensations, and of the *obscure* motions and sensations, constitute the chain of the functions and life, and serve to keep it up.

It must appear evident, to such of our readers as are already familiar with the writing of Bichat, Broussais, and other late physicians, that many of the opinions so fully, and we believe so ably, developed by them, may be traced, without difficulty, to the views of which we have just offered a brief outline. Bordeu's definition of health, though more particular of disease, which is referred to a derangement of one or more organs, is precisely the same with that adopted by modern pathologists. He seems to have troubled himself very little, in his explanation of morbid phenomena, with those essences, starting up suddenly in the body, but existing there independent of the organs, and by which the science of pathology, in the 17th, and commencement of the 18th century, was involved in deep obscurity.

The doctrine of temperaments, which at the same period, was still tinctured with a remnant of the Galenical notions about differences of humours, appears to have been greatly improved in his hands; and when we compare the results of the researches on the subject, by Cabanis, Haller, and other late writers, we readily discover, that they consist merely in the development of general observations, which Bordeu had loosely thrown out. The great influence which, in imitation of Van Helmont, he attributes to the stomach and appendages, undoubtedly constitutes the foundation of the doctrine which Broussais has lately so ably promulgated. It is true, that many of the ideas of Bordeu are crude and expressed sometimes in a vague and almost unintelligible manner; but when we recall to the mind when and where he wrote, we are only surprised to find him approaching so near the truth. His expressions of vital and obscure sensibility, possibly gave to **Barthez** the idea of that kind of sensibility, afterwards so fully illustrated by **Bichat**, under the name of organic; and it is also probable that his *obscure motion* independent of the soul, may be compared to the organic contractility of that author.

Bordeu was among the first to propose a division of the body into two lateral halves; and this served to **Bichat** as the ground work of his division. We cannot stop here to notice his opinion on this subject, as we must suppose that most of our readers are already acquainted with it from reading the Anatomie Générale.

Many of the ancients admitted the existence of a multiplicity of fibres in the human body,—regarding this latter as a compound of many heterogeneous parts, possessing a fibrous structure, each disposed in a way peculiar to it, and entering into the formation of the organs. Among the moderns, **Haller** thought that the body was composed of one *common* fibre; but under this name of fibre he evidently comprehended several kinds of elements, which, being differently modified and combined, constitute the various organs of our body. **Baglivi** admitted two sorts of fibres, the membranous and muscular; but neither **Baglivi** nor **Haller** thought that the *nervous* fibre was necessary to the arrangement of the organs. Entertaining a different opinion, **Bordeu** maintained that the animal machine is composed of one fibre—the nervous, originating in the spinal marrow. This latter is placed, as it were, in the midst of the body, from whence it sends to all parts of the system, branches which preside over the formation of the organs, and furnish them with a particular degree of sensibility. It is to the various arrangements of these fibres, he says, that we must refer the diversity of the organs. He regarded these fibres as having at their extremities, the germ of each part, which develops itself gradually in the cellular substance. For example, the nervous fibres of a muscle, form at their extremities, a kind of mould, which, extending in a particular manner, causes also the cellular substances to assume a variety of shapes; in the same way that we see calcareous strata forming madrepores, extending agreeably to the direction of the roots of a plant. Such is the idea, he remarks, we must form of the contexture of each muscle, and of all other parts, which vary according to the primitive disposition of their germ, and to the secondary arrangement of the cellular substance.

From this it results, in his opinion, that the nervous fibres constitute the frame work of the animal, and that the other parts, such as the muscles, membranes, &c. are only accessary or secondary, serving merely as a support to the nerves, and as ornaments to the body. They consist, as he thought, of cellular, or, as he termed it, mucous substance only, variously modified by the nervous system. Consequently, if we could imagine the animal to be deprived of these secondary parts, but possessed of its nerves, it would still exist as an animal, since it would be endowed with sensation and motion,—properties inherent to the nervous fibre, and constituting the essence of animal life.

Bordeu was one of the warmest defenders of the epigastric forces, and in this respect may, perhaps, be regarded as a disciple of Van Helmont; but his views, on the subject, are in many respects, different from those taught by his predecessor. He likewise particularly pointed out the defects of the doctrines of Van Helmont, and the little good that could result from the chimerical term of Archeus in the physical explanations of the functions of the animal economy in health or disease. He remarks that it is substituting an occult quality for a physical cause. Agreeably to him, all movements in the animal economy are reciprocal; or, in other words, there is no action without reaction—no effort without opposition of the antagonising powers. Life, indeed, depends so evidently on this conflict or counterbalancing, that it would soon end if those actions destined to keep it up, did not support each other, agreeably to the order of antagonism, or of relation imparted to them.

In this communication of action, the system of nerves, and that of the membranes principally concur. These organs, considered together, constitute the general system of the strength, (*forces*,) which is divided into as many parts as there are functions in the system to perform. But these powers have a centre of determination, towards which they converge in a more particular manner, and from which they receive often a much greater degree of tension and action: this centre is the epigastric region.

The power of action and reaction with which this part is endowed, depends on that possessed by the diaphragm, stomach, and intestines. These viscera not only act on all parts of the animal, and communicate with them, but oppose to each other an effort or action from the equilibrium of which health arises. This may be proved by a reference to anatomy, and to the phenomena observed during life. Thus the sympathetic nerve takes its origin in the epigastric centre, is distributed to the viscera of the abdomen, and communicates with every other nerve. The cellular tissue, or as BORDEU sometimes called it, the membranous system, forms a continuous organ, which, arising from all parts of the body, unites at the epigastrium, and undoubtedly communicates to it the action of all parts, either directly, or through the agency of the nerves.

If we notice what takes place in children, when, after birth, they remain several minutes without breathing, we discover, that as soon as the air penetrates the lungs, a shock is occasioned in the system, sometimes sufficient to raise the body suddenly, and which can be referred only to the sudden contraction of the diaphragm. This muscle, during the time the child remained in the uterus, performed its tonic action only; but in consequence of the irritation occasioned by the air, on the surface of the body, and principally in the interior of the nostrils, it contracts powerfully, and occasions a kind of convulsive movement in the whole machine. From all this he concludes, that this organ is one of the principal agents in the production of the actions of the body. During any bodily exertion, he proceeds, we experience in the diaphragmatic region, and along the recti-muscles, a degree of contraction, without which the body is incapable of any effort, by whatever cause excited; we experience also a degree of lassitude towards the same region, whenever the body is no longer able to bear the continuation of any extraordinary effort;—proving that the organs situated in this region, have been principally affected, and consequently that their action, during this effort, has been greater than that of other parts.

The state of uneasiness and tension experienced in the epigastric region after some passions of the mind, and long mental application, points out the communication of this region with the cerebral organs. Again, when we swallow aliments, the debility arising from the want of them disappears, and we experience, towards the region of the stomach, an agreeable kind of sensation, which soon extends to all parts of the body. Individuals unaccustomed to the exercise of the horse, or the carriage, often suffer greatly from vomiting; which depends on the derangement occasioned in the order of communication established between the epigastrium and the external parts of the system. We also witness eruptions on the skin from eating certain substances. The facts mentioned prove the communication of the epigastric centre with the various parts of the body. Bordeu now states, in order to show the necessity of this reciprocal or antagonising action of certain parts during life, that the mass of intestines, which is almost deprived of action whilst the child remains in the uterus, ascends high, during this state, under the ribs, because the diaphragm has not yet contracted. But as soon as respiration commences, these parts acquire a degree of action they did not before possess, and, from that, a new life;—they are, at the same time, pressed downward, and reduced to a smaller bulk than before;—they are moved and agitated by the irritation they have suffered; and this irritation is afterwards kept up by the successive movements of the diaphragm and abdominal muscles, as well as by the meconium, which, in consequence of this new sensibility, has become a source of irritation to them. From this it follows, agreeably to his views, that every viscus in particular, as well as the intestinal mass, make efforts, more or less energetic, to oppose the action of the diaphragm.

Bordeu further strengthens his opinion by observing, that, having opened the abdomen of a dog, he found that the diaphragm, when no longer opposed by the intestines, and when irritated, by large incisions, contracted much more powerfully and permanently than in its natural state; and he also found, that as soon as the diaphragm was excited to action, the mesentery contracted as powerfully and permanently, and, rising in the abdomen, drew the intestines with it;—both contractions ceased together.

At the present moment, when the science of physiology is carried to great perfection; at least comparatively to what it was at the time of Bordeu, the deductions which he drew from the facts and reasoning we have here offered, will, of course, appear to our readers, not fully justified. The great share of influence he attributed to the diaphragm will especially be regarded as unsupported by subsequent observations; but, whilst admitting this, it cannot be denied, that some of the more modern doctrines respecting the active agency of the stomach and alimentary canal, in health and disease, might perhaps be traced to some of the views concerning the communications of the stomach with the brain, muscles, and skin, mentioned above—communications which were very differently and absurdly explained by the older physiologists and pathologists.

Bordeu could not admit with **Haller**, that *irritability* should be regarded as a general property, to the exclusion of *sensibility*, which, by the professors of Montpellier, had long been viewed as of paramount importance in all physiological explanations. Adopting, and in some measure extending, the views of these latter, **Bordeu** regarded sensibility as more easily comprehended, and sufficient of itself to account for all the functions of the body in a state of health or disease.

It is but just, however, to claim for **Bordeu** a little more credit, in this question, than the friends of **Haller** are willing to concede to him; for although **Glisson** and **Payer** may be regarded as having given to **Haller** the first hints of the existence and laws of irritability, it is this latter who has reaped the greatest share of honour for the discovery and development of this property. **Haller** commenced his experiments on irritability and sensibility about the year 1742, and his papers on the subject appeared in 1759. Now it appears that, in 1742 and 1746, **Bordeu**, then only a student, investigated, in conjunction with Professor **Lamure** of Montpellier, the opinions of **Hamberger** on respiration, and those of **Willis** on the density of the cerebrum and cerebellum. This led them to analyze the question of sensibility, considered in general, as well as the share of this property, possessed by each part.

Regarding experiments on animals as too often fallacious, they applied themselves, with great diligence, to an investigation of the phenomena of life. Of all these researches there remains only what **Bordeu** has left us in his writings, and especially in his dissertation *de sensu in genere*, in which we find a division of the functions founded on mobility and sensibility, which he regarded as the principles of life, or at least, as essential to the animal being. This dissertation was published in 1742. We have already seen that Bordeu thought, (and Lamure, of course, entertained the same opinion,) that each part enjoys the power of motion and sensation, but not in equal proportions; some enjoying a large share of mobility, and little sensibility; and others in which sensibility predominates over mobility. It results from this, therefore, that so early as 1742, when Haller began his experiments, the physiologists of Montpellier, and Bordeu in particular, had already some knowledge of irritability and of general and particular sensibility; but that they explained the former differently from Haller, referring, as they did, the contractile property of muscles, both tonic or insensible, and muscular or sensible, to the influence of the nerves, whereas Haller, on the contrary, denying this influence, made of irritability a distinct and independent property.

We cannot enter, on the present occasion, into an examination of all the arguments advanced against the sentiment of Haller, during the controversy which existed so long on the subject of irritability. All we can do, is to direct attention to the manner in which Bordeu and Lamure answered the fact mentioned by Haller, that irritability continued after the division of the nerve. They endeavoured to show that the action or life communicated to this part by the nerve, might be continued for some time after the separation of the latter; only requiring for its manifestation, the same means as are employed when the nerve is uninjured. They compared the part to a piece of iron charged with magnetic property, and retaining it for some time.

Haller also might have been refuted with his own words, as he admits in the 4th volume of his elements of physiology, (p. 347) the great influence of the spinal marrow over the action of the heart, as manifested by the occurrence of death when the medulla is cut at the upper part of the neck, from which originate all the nerves of the heart. "*Hæc omnia ostendunt evidenter, præcipuos cordis nervos ab ea sede medullæ spinalis nasci; nàm cæterùm vitia hujus partis corporis irritatæ mentis officia non turbant.*" He further adds, (p. 356) that fœtuses that have lived without brain, possessed enough of the spinal marrow to enable the heart to exercise its action. "*Plerisque medullæ spinalis etiam fuit tantùm, quantùm sufficere poterat ut cordis motus superesset.*" After this admission, it is difficult to comprehend how Haller could maintain that contractility and the action of the heart in particular, was exercised independently of nervous influence.*

Be this, however, as it may, BORDEU defined sensation, a function which, when exercised in man, causes him to perceive objects through the medium of certain organs, which are differently affected or modified by the presence of these objects.

Sensation or sensibility is very extensively distributed—it presides over, and directs every function,—it presides over diseases, and the action of remedies;—it varies and is differently modified in every part of the body. It principally reigns in the stomach, whose functions depend on a degree of sensibility too often overlooked by physicians, who have regarded this viscus as an almost passive reservoir; whereas it is endowed with a considerable portion of sensibility,—the various degrees of which (or the various tastes) are manifested at each moment, and keep up or overthrow the regular accord and relation of the whole economy. Consequently the stomach and its appertenances, which we have seen BORDEU regarded as a principle centre of the motific powers of the body, are also considered by him as a centre of all the various degrees of sensibility.

We shall not follow BORDEU into an investigation of the structure and properties of the nerves; nor of the mechanism of their action, or the agency of the soul in the production of sensation. It will suffice to say, that he viewed these chords as the organs or principal instruments of sensibility, and compared the nervous system to a polypus, the pedunculi, or branches of which are distributed or expanded in all parts of our body: the brain being the bulb or receptacle of the roots, and the medullæ oblongata and spinalis, the body or *tige*.

Each nervous prolongation performs a particular function, or predominates in some part, and possesses, as the ancients maintained, an inherent, proper and sensific faculty; the true agent and vehicle of sensations. The same object impresses a sensitive action only on homogeneous fibres; and as there are but few of this nature, we may readily imagine, that almost each nervous bundle possesses a peculiar disposition and aptitude to the exercise of its proper sensation. It will be incapable of any other, except perhaps of the sensation of pain or pleasure taken in the general. After citing many examples and offering many remarks, he concludes that each part of our body is susceptible of experiencing a general sensation of pain or pleasure, which each experiences and expresses in a peculiar manner.

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* Ollivier de la moéle epinière et de ses maladies.—p. 62.

This is more especially noticed in the viscera, which are endowed with a kind of instinct or tact excited and exercised by a moderate irritation. From this it follows, that the idea expressed by the ancients, that each viscus possesses an inherent faculty, is not entirely to be rejected. It tastes and chooses as it were, from among the aliments or substances offered to it, such as best suit its particular nature; retaining those that are useful to it, and rejecting such as might prove injurious. All sensations, he regarded as placed under the control of the soul.

Bordeu, after mature reflection on the subject, expressed the opinion, that the soul or principle of life exercised its action more particularly at the origin of the nerves; and that this action is more evident at the place where the nervous fibres decussate each other, namely, in the medullæ oblongata and spinalis. This he inferred from the fact, that whenever this part is cut or punctured, the animal dies. A plausible explanation of the cause of death from wounds of the medulla, could only be expected after multiplied and careful experiments on animals—a task which was reserved to Le Gallois and other modern physiologists. As regards his opinion respecting the seat of the principle of life, in the medulla oblongata, Broussais has, in latter times, reproduced it in somewhat different language.[*] Bordeu regarded the epigastric region as another point or centre, in which sensibility is particularly manifested; as proved by the acute impression experienced in this part during pain, or some violent passion of the mind.

The views which Bordeu entertained on the subject of secretions and excretions, and which will be found fully developed in in his elaborate work on glands, next claim some attention. We cannot stop here to lay before our readers his sentiments respecting the minute structure of glands, or even an outline of the manner in which he examined the opinions of MALPIGHI and RUYSCH on this subject. It will be sufficient to state that he inclined to the opinion of the former, whilst subsequent anatomists have, for the most part, adopted the views of RUYSCH. In his inquiry into the action of glands, BORDEU commences with *excretions*. At the time he wrote, it appears to have been generally admitted among physiologists, that all organs, and particularly glands, require compression in order to be able to accomplish the function of excretion. Such, at least, was the sentiment advanced by BERGERUS, BOHNIUS, and adopted and defended by BOERHAAVE and his disciples, as well as by the physiologists of Montpellier, LAZERME and FIZES. BORDEU, on the contrary, was early of opinion that compression, so far from favouring this effect, would, when violent, tend to prevent it; and he soon came to the conclusion, that these organs expel the humours they contain by means of an action peculiar to them, as is found to be the case in the expulsion of the milk and semen.

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[*] Sil n'y a qu'un centre unique de perception et de volition, il doit etre dans le point où se fait la perception du besoin de respirer, et d'où part la volition qui détermine l'action des muscles inspirateurs. Or ce point est l'insertion des nerfs de la huitieme paire: donc ce point est le centre unique de toutes les perceptions et de toutes les volition. *Physiologie appliquée à la Pathologie*, t. 1. p. 103.

He examines these two excretions with attention and minuteness, and applies his reasoning, by analogy, to the others. He remarks, that before the excretion of the semen takes place, we notice the *erection* or a preparatory disposition in the organs of generation. This is found to be the case in the internal as well as external parts of this system; and points out the existence of a *spasm* of all these parts. Now, this spasm he elsewhere regards as the effect of an irritation seated in the nerves of the gland,—thus establishing the fact, that a state of irritation is requisite to the performance of the excretory process. This is further proved to be his view, by an examination of what follows. Thus in regard to the excretion of milk, he says, the child which sucks not only extends the nipple by pulling it, but irritates and stimulates it in such a way, that it contracts and takes on a state of erection, which in some women is so easily excited as to be occasioned by the mere touch. He remarks, that it is true there are instances in which the milk is made to flow by a mere pressure with the hand. In such cases, however, it is expelled in a jet, which soon subsides,—showing that it proceeds only from the milk vessels between the fingers and the extremity of the nipple. If the *spasm* in the vessels does not occur, the excretion ceases. From all these facts, he is led to conclude, that the process of excretion depends on an action peculiar to the organs destined to its accomplishment; and he further remarks, that in order that this process should be completely effected in these organs, they must, 1st, be placed in a preparatory state of spasm, which he designates under the general name of *erection*. 2nd, They must undergo a degree of motion (secouses) or suffer an irritation, without which, the simple spasm would not of itself be adequate to the performance of the excretion. 3d, A proper disposition or tension of their excretory ducts. 4th, And finally, a particular disposition of their blood-vessels, by which he means such an arrangement of these latter as will secure to the part a larger flow of blood. These conditions are distributed in various degrees to the different excretory organs. Thus erections are more evident in the organs of generation; whilst in others, there exists a greater tension and elongation of the ducts; but in all, the peculiar arrangement of vessels alluded to, is found. As he applies the same reasoning to the functions of excretion as performed by the parotid, liver and other glands, we proceed to examine his views in relation to secretion.

This function he also regards as accomplished by means of a peculiar action with which the gland is endowed, and which is entirely under the control of the nerves. The following reasons are given: 1st, If we cut a nerve going to a gland the secretory process is suspended. 2nd, The glands are supplied with numerous nerves, without, however, enjoying to any remarkable degree the motific and sensific properties. If not to the effect alluded to, to what are these nerves destined? 3d, Secretions are supposed to be suspended during sleep. Now, sleep is the effect of the inaction of the nervous system. This will consequently serve to account for the suspension of secretion. This function is also suspended or diminished by opium, the effect of which is known to moderate the action of, or even to stupify entirely, the nerves. 4th, By irritating, or augmenting the action of a nerve going to a gland, the function of that gland is increased, which would not be the case, were not this function under the control of the nerves. 5th, The influence of the imagination over secretions is well known. How does it produce this effect but through the agency of the nerves? Consequently the nerves must be the influential organs in the performance of this function. 6th, The duration of secretions and their suspension after a regular period, is another proof of the action in question. The same phenomenon is noticed in every part, and can depend only on the fatigue of the nerves and their want of repose.

The nerves contribute moreover to the function of secretion by attracting to the glands a greater quantity of blood; for the increased energy of nervous action directs a greater flow of blood to the irritated part. This, he adds, cannot depend simply on the action of the heart; or be an effect of the ordinary laws of the circulation, as these operate equally at all times, during an increased or even a diminished secretion. He further remarks, that by analogy we might suppose the nerves destined to exercise two functions in the glands, in the same way that we find them to do in the muscles, in which, 1st, *they serve to keep up the life of the parts, and 2nd, to preside over their muscular action.* The metastasis of secretions also, as for example, the change in the mammæ when the action in the uterus ceases, he thinks, can be explained by supposing it to be effected only through the agency of the nerves. The manner in which secretion is performed, is referred by him to the peculiar sensibility of the nerves situated at the minute extremities of the ducts, by which these are made capable as it were, of tasting the qualities of the substances presented to them by the blood-vessels,—admitting those that suit, and rejecting such as might injure them: In the same manner, we suppose that the orifice of the lacteals admit chyle but reject most other substances. From all this it follows, that in BORDEU's opinion the function of secretion must be ranked among the *vital* functions, which are under the domain of sensific and motific properties. It is neither mechanical nor chemical.

In the above *exposé* of BORDEU's views, we are struck with the justness of many of the positions he lays down:—such as the peculiar action inherent in each part;—the influence of the nerves in secretion;—the necessity of irritation to the exercise of this function; and the effects of nervous excitement in producing an afflux of blood; all of which positions are, at the present day, pretty generally admitted by the best physiologists. It is true that BORDEU did not make the necessary difference between the influence of the cerebral and that of the ganglionic nerves, in the process of secretion; for, we find in paralysis of a limb, for example, the secretion of synovia continuing;—a circumstance referrible only to the continuance of energy in the ganglionic nerves following the vessels. But the famous BICHAT committed the same error, and by this was led to deny the correctness of BORDEU'S conclusions respecting the influence of the nerves. At any rate, BORDEU did all that could be done on the subject, at the time he wrote.

In the work before us, (on glands) may be discovered, we believe, the ground-work on which BICHAT subsequently founded his division of functions. Thus in several places, and especially at page 415, he divides them into those that have a reference to the maintainance of the life of a part,—which functions are extensively and equally distributed; and into those which refer to the exercise of the particular *act* allotted to the same part. Having already noticed his idea concerning the double function of the nerves in the glands and muscles, we think it only necessary to allude briefly to what he says of the lungs, which, he remarks, *live* in the fœtal state, continue to live after birth, and moreover perform then their particular function—respiration.

BORDEU is, we believe, the first author who publicly taught that the catamenial fluid resulted from a secerning action in the uterus. This opinion was subsequently hinted at by Mr. HUNTER, and maintained in plain terms in 1787 and 1788 by Drs. CRAVEN and MACLAURIN, in their inaugural dissertations defended in the school of Edinburgh; and at a still later period, by our countrymen, Dr. DAVIDGE, of Baltimore, and Drs. CHAPMAN and DEWEES, of our own city. Much credit has been claimed, even by some late writers, for the honour of having discovered this fact, if such it must be admitted to be; and in all this contention about priority, very little justice has been done to BORDEU; for we do not find his name often mentioned in relation to the subject, and when it has been quoted, the writer appears to have done so without consulting his work. Sure it is, however, that he deserves the credit of originality on this head, since the first edition of his treatise on the glands, in which this theory is suggested, appeared in 1751. As we cannot detail on this occasion, all BORDEU'S sentiments on the subject, we shall content ourselves with observing, that he considered the uterus as endowed with an action peculiar to it—an action distinct from that presiding over the life of the organ;—superadded to it, and allied in many respects to that which presides over the excretions and secretions of ordinary glands. The comparison, he remarks, of the uterus with the glands, is particularly striking, when we examine what occurs at the time of the catamenia. He refutes the idea of general plethora, and remarks that if a partial plethora occurs, it is only the effect of a previous disposition, to a catamenial discharge, in the uterus. Thus, he says, the excretions of the uterus is effected by the same mechanism as that of all other glands we call *active*; the organ awakens *et erigitur*, by which means it attracts a larger quantity of blood, and excretes it in the manner we have described.

After considerable reflections on the subject, and after detailing many cases, he comes to the conclusion, 1st, That the ailments of women, at the approach of the menses, depend on the action and sensibility of the uterus. 2nd, That the discharge of the menstrual fluid from unusual parts, supposes that the uterus has not lost all its action. It is not disposed to allow the menses to flow; but is not, for that, in a state of insensibility. 3d, If it were so completely, all irritation would cease, and the woman would find herself in the same situation as girls who have not yet menstruated.

In reference to digestion, BORDEU agreeing in opinion with all physicians, thought that it was performed by the action of the stomach and gastric juices; but he further believed, that all parts of the body concurred to its accomplishment. On this subject his sentiments were somewhat vague, and seem to have arisen from his witnessing the effects occasioned in all parts of the body, by the influence of the stomach during digestion. In order to establish his position, however, he analyses all the phenomena attending hunger and digestion,—noting with particular care, the effects experienced by the stomach, and other parts of the body, during these states, and also detailing the different periods of digestion, which, as we shall see by and by, he compares, not unaptly, to the different stages of a febrile paroxysm. From all this he infers, that as various parts are affected during the process, so those different parts must concur to its performance. He remarks that there is in the body two sorts of actions which cross each other—one from within outwards; the other from the exterior to the interior. It is on this principle he observes that we are to account for the chill occasioned by a fulness of the stomach, and by an intermittent fever, as well as the heat and redness which succeed. Whatever may be thought of this explanation, he expressly states, that when the stomach is occupied with the process of digestion, it becomes a point towards which all the powers of the system are concentrated, and from whence they start to be reflected on the surface of the body. He notices the action of the stomach on the organs of sense, on the lungs, muscles, &c. during digestion, and says that the agents of this communication are the nerves and cellular membrane. On this subject he observes, that the gastric nerves are united with all the other nerves of the body; it is not astonishing, therefore, *that when irritated* by the presence of aliments, they should produce an impression on all parts of the animal machine.

The doctrine of sympathy, such as is taught at the present day, if not founded by Bordeu, was at least very much benefitted by his researches; for every thing he has written on what he denominates the *department* of the organs, relates to the influence which the latter exercise on one or more parts of the body; this we may infer from his definition of the term, by which, as he tells us, he means all that enters into a kind of action, when these parts act or undergo various particular modifications. The action of the organs, on all other parts belonging to their department, is communicated; 1st, through the medium of the circulation; 2nd, by the system of nerves; 3d, by means of the cellular tissue. The department of each organ is manifested in health and in disease. Although it is not possible to determine the exact limit of each department, we know that some parts exercise an action over the whole system, whilst, on the contrary, others have but a very restricted department, and seem to produce an action on but few parts. Among the former, we may enumerate the stomach, diaphragm, intestines, and parts of generation in man, and the uterus in women; but although the sphere of action of these organs be very extensive, they each seem to act in preference on some particular part. Thus the uterus exercises a specific influence on the mammæ,—the parts of generation on the vocal organs; whilst the intestines extend their action principally to the extremities.

Other viscera have a department, though to a much more limited extent,—as for example, the liver, which influences such parts only as are situated on the same side of the body with it. The spleen exercises an influence on the organs of the left side—the kidneys on the thigh and upper extremity of the same side, and sometimes on the diaphragm. The duodenum, he remarks, excites pain in the back during the chill of fever; and it is not to be denied, that irritations of this organ are communicated to the liver and pancreas, which, consequently, must be ranked among the organs belonging to its department.

The glands have also their department; but, as it would occupy too much space to enter into greater details, we pass to another subject.

Most physiologists, BORDEU remarks, have considered the circulation in a general way, without appearing to bear in mind that it can be very different in the large vessels from what it is in the smaller ones. Is it not probable, he asks, that each part can have its particular circulation, which may be accelerated and retarded without affecting the general circulation? Is it not also probable that these particular circulations are more or less modified and accelerated, according to the different orders of vessels in which it occurs, and to the action and uses of each part? There is, therefore, a general circulation, and many particular circulations, which may be compared to so many little circles, terminating in a larger one. BORDEU makes use of the word circle in order to denote that a part, although receiving its blood through the medium of the *general* circulation, or that which is performed in the larger vessels, has nevertheless its own circulation, according as it may or may not be in action. The other parts which receive the influence of this action, belong to the department of its *circle*. Agreeably to BORDEU, therefore, each part of the body may be regarded as being, in some measure, independent of the others; and, although it acts by means of the general circulation, it is as distinct from other parts, as the system of red vessels is distinct from that of the white, or as the circulations of the lungs and liver are from that of the large vessels.

BORDEU was of opinion, that the discovery of the circulation of the blood had occasioned too much neglect of the relation and connexion existing among the vessels of different organs; as, for example, those of the interior of the nostrils with those of the abdominal viscera; and he remarks that STAHL and his disciples have shown, by many facts, that the circulation, especially of the smaller vessels, is not fully explained by the reasoning of HARVEY and his successors. After endeavouring to prove this, he remarks, that

> "If it be true that between the extremities of the arteries and veins, there exist vessels of communication, in which the humours are moved, agreeably to the particular determinations of the nervous oscillations, and without following the laws of the circulations, &c. If the anastomoses can only serve to afford to the humours a means of passing and repassing, of flowing and reflowing; or to subtract a large portion of vessels from the same laws of the circulation. Finally, if the cellular substance is so arranged that the liquors it contains can move in all directions, the Harveian laws of the circulation do not hold good in this tissue, which by itself constitutes, at least, the half of the volume of the body."

It is plain, from this, that BORDEU must have been one of the principal sources from whence the great BICHAT derived his idea of the independent circulation of the capillary system,—an idea, however, he greatly developed, and illustrated in a more intelligible and satisfactory manner. That the capillary system has its separate circulation, and that the blood, when once pushed into those vessels, no longer obeys in toto the laws of the general circulation, as is particularly seen in irritation, may be to some extent true; but we are disposed to admit with BROUSSAIS, SARLANDIERE and other physiologists, that, whilst a portion of the blood circulates in all directions, and proceeds to the exhalents, (if such vessels exist,) as well as to the various secreting apparatuses, another portion passes directly into the veins, and therefore, may be fairly said to obey the laws of the general circulation.

Inflammation, says our author, is the cause, or effect of many diseases; but we must not, on that account, endeavour to discover it, as many of our modern physicians do, in all complaints. These expressions, which are nearly similar to those made use of by many of our cotemporaries, we shall presently endeavour to account for; and perhaps it will be found that the explanation we shall offer, will serve, in a great measure, to oppose to the modern skeptics about the inflammatory nature of many maladies. With BORDEU, inflammation consists in a collection of blood in a part, in which there is, at the same time, an augmentation of heat and power. All these phenomena, he observes, are produced through the agency of the nerves and vessels, so that the fluids which these contain, may flow in every direction, according to the determination and power of the oscillations. These vessels may be viewed as so many rays terminating in a particular centre. This latter is very often a mere derangement, in some laminæ of the cellular membrane, producing, in that part, the same effects as a thorn,—increasing prodigiously its action, or, to use the expression of Van Helmont, rendering it furious.

A part which inflames, becomes as it were a separate organ; having its action, circulation and functions independent, in some respects, of the general circulation. It possesses a kind of action superadded to that constituting its life,—it becomes a separate circle, and finally a centre towards which the energies of the system are concentrated, and the humours flow in great abundance. He, therefore, regards the action of the nerves of a part, as the cause of inflammation, and the engorgement of the vessels as the effect. Thus, he continues, if each trunk of the vessels carrying red blood, be surrounded with nerves, as is probably the case, it follows, that when these nerves are irritated, they will propel a larger quantity of blood towards the ramifications of the vessels, as take place in the glands, towards which, during their function of secretion, the humours are carried in larger quantity, and with greater force.

He remarks, that many vessels are both sanguineous and lymphatic,—carrying white fluids in a state of health; but under certain circumstances enlarging sufficiently to carry red blood. This particularly occurs in inflammation, when these vessels, whose nerves are irritated, become dilated and straightened. They now take on a state of increased action, or violent *erection*, which causes more blood to flow through them. In other places, he refers the tumour of inflammation to the erection (érétisme) or tension of the vessels and nerves. Whether right or wrong, this idea approaches pretty nearly to that of active dilatation, which M. Prus has lately endeavoured to revive.

Bordeu particularly dwells on the fact that the mere repletion or plethora of veins, arteries, and intermediate vessels, does not constitute inflammation, and says, that if these parts are washed with warm water, and show concretions, it will indicate inflammation,—pain, acute and spasmodic tension of the part; rapidity in the march of the disease, and general fever having preceded.

The contrary phenomena, indicate the effect of a defective action in the part. It follows from all this, he concludes, that the cellular tissue is the true seat of inflammation. It expands and enlarges to form those tumours noticed in that disease, but which are never seen in parts simply membranous, and little furnished with this cellular substance.

This latter remark will account for the expression we noticed above; for it follows from this, that BORDEU, like most of his cotemporaries, and too many of the physicians of the present day, regarded *phlegmonous* irritation, or that attacking the cellular substance, as the true type of inflammation; and completely overlooked this morbid state when seated in the membranes and tissues of the body. On this head. we believe that much good has been done by BICHAT, and his followers, in France; for nothing could contribute so much to advance the true pathology, and therefore treatment of disease, as a correct knowledge of inflammation, as modified in all the tissues of the system. We cannot help, moreover, calling the attention of our readers, to the views of BORDEU, respecting the primary modification of the sensibility of a part affected with inflammation, and the influence this increased action has in producing an afflux of blood. These are precisely the views of BICHAT, and modern pathologists, though the latter have on this, and other points, very clearly developed and greatly improved the hints of our author.

With these observations we close this article,—intending to take up on a future occasion, the pathological views of BORDEU, which are entitled to considerable attention. Regarding, also, his works on the critical pulse, and cellular membrane, as worthy of notice, we shall in a subsequent number devote a few pages to an analysis of their contents.

BIOGRAPHY.

ARTICLE XV.—*A short Biographical sketch of the late Professor* BECLARD, *of Paris.*

THERE are probably few only of the readers of this Journal, to whom the name of BECLARD, whose recent loss, the medical profession of France, and indeed of the civilized world, will long deplore, is not advantageously known. The medical periodicals of our country, and more particularly the translation of his valuable appendix to BICHAT'S Anatomie Générale, by our countryman, Dr. HAYWARD, have contributed to spread his justly merited fame throughout these states. This circumstance leading us to think, that a condensed account of the principal events of his life would be read with interest, we have taken the liberty to offer one, compiled from such materials as we have found in the *Archives générale*, and other Journals.

PETER AUGUSTINE BECLARD, was born at Angers, on the 12th of October, 1785. His father, a respectable tradesman of that city, but on whom fortune had not extended her favours, encouraged by the disposition he early manifested, sent him to the central school of that city, and bestowed on him as good an education as his limited means allowed. Young BECLARD soon displayed a decided taste for the study of the natural sciences, and devoting himself with particular care to the acquisition of Botanical knowledge, was honoured with several prizes at the *Jardin des plantes* of Angers. With an evident inclination for intellectual pursuits, however, he was destined to pursue the same career as his father, and with this intention was sent to Nantz, and afterwards to Tours, where he was compelled to engage in business. But notwithstanding all the entreaties and exertions of his friends, and in defiance of his own efforts to comply with the wishes of his beloved parents, BECLARD was unable to control the strong bias of his genius, and repress the intenseness of his thirst for knowledge,—and to this cause, we must refer the rescue from the drudgery of a commercial life, of a mind intended by nature to move conspicuously in a more elevated sphere. Nor were the period and existing circumstances less propitious to the accomplishment of this important end. The Revolution had removed all the obstacles which were occasionally encountered by individuals of the *tiers etat* who aspired to the honours of the Doctorate; and the celebrated Bichat had already attained the zenith of his glory. His name and works were subjects of general conversation, even in the remotest provinces of France, and therefore could not long remain unknown to one, so diligently employed in the cultivation of scientific subjects. Animated by a noble ambition, Beclard felt on many occasions, a degree of envy of the fame enjoyed by this great physiologist, and from this moment seems to have manifested an irresistible desire to engage in the same pursuits.

Unable at last to repress his son's ardent thirst after knowledge, and positively assured by the tradesman to whom the latter had been entrusted, that he was totally unfit for a commercial life, the father allowed him, though reluctantly, to prosecute the study of Medicine, and afforded him the means of attending the course of instruction delivered at the Hotel Dieu of Angers. Finding himself, now, placed on a field more congenial to his disposition, Beclard engaged in the study of Anatomical and Surgical sciences with the most unremitting zeal, and in the course of *one* year was deemed sufficiently advanced to be admitted as one of the house pupils of that institution. After remaining there four years, and acquiring a high character for ability and industry, he repaired to Paris, (in 1808) and soon signalized himself at the various *concourse* of the hospitals of that capital. Obtaining one prize after another at the practical school established by the faculty of medicine, he was pointed out as the most brilliant pupil of that institution, and shortly after, was selected by Mr. Roux for the office of his assistant lecturer (répétiteur) at La Charité. It was not long before Beclard, at a public concourse, and in opposition to many able competitors, succeeded, as chef des travaux anatomique to M. Dupuytren, who had just been promoted to the chair of operative surgery, vacated by the death of the celebrated Sabatier. About this period, Beclard began to deliver private lectures on anatomy and surgery, and so great were the talents he displayed in the difficult act of teaching, that his success exceeded the most sanguine expectations.

In the year 1813, Beclard obtained the honours of the Doctorate, and on this occasion presented a thesis in which he offered several original opinions in anatomy, physiology, and surgery.

Two years afterwards an opportunity presented for displaying his rare surgical talents. A concourse having been opened for the selection of the assistant surgeon of the Hotel Dieu, he offered himself as a candidate for that office, and gave proofs of profound learning and of consummate skill in operative surgery. On this occasion, however, and on this alone, fortune did not smile upon him, for M. Marjolin, whose talents were not deemed superior to his, succeeded in obtaining the situation. Beclard was then appointed surgeon to the hospital of la Pitie, where, to the close of his life, he continued to show the advantages which a thorough knowledge of anatomy, joined to dexterity and great presence of mind, confers on the operator. Finally, in 1818, he was elected by the unanimous votes of his *preceptors*, and according to the wishes of all the pupils, to the chair of anatomy in the Faculty of Medicine of Paris.

After attaining this important station, Beclard appears to have devoted his whole time, and his whole soul to such a continued series of laborious studies, connected with his office of a teacher, as caused his lectures to be crowded with students, and eventually shortened his existence. Few men appear to have been more devoted to public duty and more ardent in the pursuit of science. As a lecturer, he was clear and precise. His conception was rapid and vigorous,—his memory retentive,—his judgment correct; and if his style was unadorned, the deficiency was compensated by the agreeableness of his elocution. His hearers forgot the professor amidst the richness and the beauty of science which he displayed to them; and some idea may be conceived of his industry, from the fact, that notwithstanding his great abilities and his long familiarity with his subject, the preparation for a single lecture, often occupied him four or five hours. He seems to have had a pure passion for science, unconnected with any strong desire for personal distinction; welcoming knowledge, from whatever source or country it came; and appearing to have been uniformly more desirous to *learn* the truth, than to be the *discoverer* of it.*

In respect to his private character, we find that it was not less distinguished by virtues, than his public one by talent and industry. We are informed, that in conversation, he was not naturally of a communicative disposition—a disposition increased by the habit of reading and meditation. But when a stranger had got over the coldness of his exterior, he invariably found him obliging, and ready to aid others by his advice, his knowledge, and access to his valuable library. The loss of BECLARD, says one of his biographers, will be felt, particularly at a period when the spirit of party and political feuds has caused such deplorable results in medical institutions. Amidst conflicting parties and opinions, such was the high estimation of his talents and character, that he was selected, on all occasions, as the mediator and judge. He was, himself, on the point of falling a victim to one of those political re-actions from the influence of which, sciences ought to be shielded. In devoting himself, as he did, entirely to the duties of his chair, and neglecting to profit by those lucrative advantages which his great surgical talents afforded him in the world, BECLARD had sacrificed his pecuniary interests. When it was thought proper to re-organize the faculty of medicine in 1823, very general anxiety was felt for the probable removal of the professor, who was truly its support and brightest ornament; but notwithstanding some intrigue and manœuvring, his commanding merit preserved him his chair in the newly modelled school.

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* London Medical Repository.

In the midst of his labours and duties, in the prime of his life, and in the height of his fame, BECLARD was attacked by a disease, which, in eleven days, deprived his family of his protection, and his pupils and country of his services. Too great an assiduity in his arduous pursuits, had for some time impaired his health, and brought on several times, the symptoms of a chronic inflammation of the stomach, which had yielded to an appropriate treatment. The same causes at last, gave rise to an acute affection of the brain, preceded by, or accompanied with, erysipelas of the head, which, notwithstanding all that art or friendship could suggest, terminated fatally on the 16th of March. In the early period of his disease, and afterwards, during its remissions, he formed a just opinion of the danger of his condition, and established the diagnosis with great calmness and precision. With every thing to attach him to life, and every capability of enjoying existence, he saw the sure approach of death and met it, if not with indifference, at least with becoming firmness and resignation. On dissection, the brain and its membranes were found highly injected.

The stomach presented the cicatrization of a small ulcer, which had destroyed a portion of the two internal coats of that viscus. The cerebral mass was very large, especially in its anterior lobes, which contrasted in a very striking manner with the moderate development of the posterior lobes.

His chief published works are, a memoir sur les Acéphales; a memoir of considerable length, sur les Blessures des Vaisseaux, inserted among those of the society of Emulation of Paris; a memoir on osteology, the fruit of much observation and research; a thesis on embryology, published in the name of his brother; numerous experiments on local affections of the nerves, commenced in 1822, and lately published in a thesis by Mr. Descot; and a work on general anatomy, for the use of students. He was the author of most of the articles on anatomy contained in the *Nouveau Dictionaire de Médicine;* as well as of several papers contained in the *Bulletins de la Societe d'Emulation.* He also published an appendix to Bichat's *Anatomie Générale.* Assisted by M. Jules Cloquet, he translated Mr. Lawrence's work on Hernia; and in conjunction with the same author, commenced a series of anatomical plates, an undertaking, however, which his many occupations did not permit him to continue.

Beclard suggested and performed several new operations; among which may be noticed, a new method of performing partial amputation of the foot; the extirpation of the parotid gland; a new mode of curing the fistula of the parotid canal; various methods for disarticulating the bones, or for amputating the extremities at the joints, &c., and a modification of the operation of lythotomy as originally proposed by Celsus.

The general anxiety manifested by all classes in Paris on the intelligence of his disease, and the public gloom on the occasion of his death, must be regarded as conclusive evidences of the esteem in which Beclard was held, and the most unequivocal eulogium on his talents and virtues. Nor did the attention paid him during life, cease with it; for every individual who had considered him as entitled to his regard, hastened to pay to his mortal remains the last honours. From this cause, his funeral presented a scene at once affecting and imposing. It was attended by the faculty of medicine; a deputation from the Royal Academy; the different medical societies; a crowd of colleagues and friends; and more than two thousand students, who anxious to offer a last proof of their love and respect for their master, demanded and obtained the honour of bearing his body to the grave. Thus formed, the procession, passing through the greater part of Paris, proceeded to that beautiful place of repose for the dead, the cemetery of Pere La Chaise, where various honours were paid to the defunct. First M. PELLETAN, in the name of the faculty of medicine; then M. PARISET, in the name of the Academy; then M. ROUX, in the name of the section of surgery; then M. ADELON, in the name of the numerous friends of the deceased, and lastly, a young pupil, M. RIDARD of Angier, in the name of the class, deplored the end of a life which had been so useful and so short, and enumerated the talents and virtues of the dead. After this, his pupils terminated their pious office by covering the precious remains with earth, and closing the grave with their own hands.

Our present limits will not allow us to offer here all the extracts from the different *eloges* pronounced over the grave of BECLARD, which are contained in the French periodicals; but we cannot refuse ourselves the pleasure of translating the following delicate comparison by which Mr. Roux concluded his remarks:—

"The large concourse of pupils assembled around this coffin—the earnestness they have manifested to accompany with us, to his last abode, the teacher whose voice they heard not many days since—whose lectures filled them with admiration, whilst they inspired them with a taste for study, and implanted in their minds the germs of useful knowledge;—the tears which I see them shed—the sincere affliction I see depicted in all countenances, and the few words I have said respecting the brilliant, but so short career of our colleague and friend—all these, gentlemen, recall involuntarily to my mind the not less painful day, when paying to BICHAT the last duties, I deposited on his tomb the last homage of a pupil he cherished. BECLARD lived a few years longer than BICHAT; but as the latter, he has merely *passed* among us. Like BICHAT, he doubtless fell a victim to an excessive application. Like BICHAT, he formed numerous disciples—like BICHAT, of whom he did not, perhaps, possess the creative genius, but to whom he was superior in other respects, he leaves behind him durable testimonials of a true and rare talent. Like BICHAT, BECLARD will be ranked among those men, of whom nature is avaricious, and of whom the sciences have reason to be proud. Like BICHAT, he carries along with him the regrets of students, who eagerly sought to hear him. Finally, like BICHAT, he perceives his coffin surrounded with numerous friends, and his death plunge into affliction all who are able to appreciate, equally with talent, pure morals, integrity, and goodness of heart,—qualities which our colleague possessed in the highest degree."

QUARTERLY SUMMARY

OF IMPROVEMENTS IN MEDICINE AND SURGERY.

ANATOMY.

1. Dr. Granville's *Mummy*.—The conclusion of Dr. Granville's paper, mentioned in our last, as described to us in a London periodical, is so curious a specimen of anatomical research, that we conceive it will be interesting to our readers to receive a cursory notice of it.

Some of the means by which Dr. G. reaches different conclusions respecting this mummy, are almost as ingenious as those ascribed by our domestic traditions to the Indians of our country, when in pursuit of their enemies. Thus he argues, that she died between 50 and 55 years of age, after bearing children; from the "thinning of the centre of the plates of the ilia," noted by Professor Chaussier to take place under those circumstances after the 40th year of age, and to reach its maximum about 55. She died of "ovarian dropsy, with structural derangement of the uterine system generally;"—because the womb is of larger dimensions than usual at that age, the ovarium and round ligament of the right side are enveloped in a mass of diseased structure, and the remains of an ovarian sac are found on the left. We presume the Egyptians, notwithstanding their perfection in bandaging, had not anticipated our correspondent, Dr. Alban G. Smith, and the others who have extirpated ovaria. *Porrigo decalvans* was found on the head; and the head had been shaved. "These are highly interesting inquiries," says Dr. Granville, and we acknowledge that they have piqued our curiosity. The bandages which enveloped this mummy were steeped in a vegetable astringent matter; and the skin was tanned. Saline crystals, exhibiting nitrate of potash, carbonate, sulphate, and muriate of soda, and traces of lime, were found on almost every part of the body, externally and internally. Dr. G. conjectures, that the water of the Natron lakes was employed, and that the earthy masses found in the abdomen were mud from these latter. The cuticle was removed, as Dr. G. supposes, by the lime, previously to tanning. The body was thoroughly imbued with a mixture of resin and wax, so as to penetrate between "closely adhering folds" of the peritoneum. Dr. G. concludes, that the body must have been soaked for a length of time in melted wax and resin. "The joints were found flexible," as well as "the cellular substance," and the two coverings of the spinal marrow. We presume the writer means *parts* of these substances—we have not the original. The priests who prepared this mummy seem at any rate to have anticipated a part of Mr. **Julius Cloquet's** art of *squeletopée*, or of making flexible natural skeletons.

The miracle of the extreme neatness of the Egyptian bandaging is materially diminished by the fact that the materials they employed were *elastic*, and required no duplicature to make them fit.

We analyse the above, not so much as a piece of medical antiquity, as from its being such a curious specimen of analysis—a kind of physiological algebra, which affords an useful exercise for the mind of an anatomist or physician.—*London Medical Repository, November.*

2. *Absence of the iris.*—A case of this deficiency is recorded by Dr. **Pœnitz**, of Dresden. No other inconvenience was experienced for the first fifteen years of the life of the patient than a slight tendency to myopia. A cataract then occurred, and was operated upon successfully.—*Bulletin Medicale, Aout.*

3. *Case of obliteration of the superior vena cava.*—Mr. C. E. **Deckart**, of Breslau, has described a case of entire obliteration of the superior vena cava, from the pressure of an enormous aneurism of the aorta. The circulation was carried on by means of the branches which anastomose between the vertebral and hypogastric veins.—*Bulletin Medicale.*

PHYSIOLOGY.

4. *Functions of the different parts of the Brain, in Fish.*—M. **Flourens**, known to us by his experiments on the cerebellum and other parts of the encephalon, has published a series of experiments intended to demonstrate the nature of the different parts of the brain of fishes. M. **Serres**, in his superb work, reviewed at some length in our last, has spent much time in endeavouring to classify and compare the strangely arranged forms of the encephalon of these animals, by dissection. M. **Flourens** has endeavoured to show the functions of the same parts, by observing the changes consequent upon their removal. This he considers as the only true test of their nature and analogy to any corresponding parts in other animals. We shall sketch his results. In comparing fishes with superior animals, he concludes that the point in which the brain of the first differs most materially from that of the latter, is that part of the organ which presides over the function of respiration. This appears, by various experiments and by rational conclusions drawn from dissection, principally through the labours of Messrs. **Flourens** and **Charles Bell**, to be, in the higher animals, that longitudinal division of the medulla oblongata from which arise the 8th pair of nerves and the other nerves of respiration. (The respiratory nerves, according to Mr. **Bell**, may be recollected to be the par vagum, portio dura, spinal accessary, phrenic, and a trunk, called by Mr. **Bell**, the external respirato-

ry, arising from the cervical nerves and connected with the phrenic.) In fish, M. FLOURENS found it augmented into a ganglioniform mass, nearly as large as the cerebral hemispheres themselves; and from this ganglion arose the nerves which ran to the gill covers, the *opercula* of the fish's organs of respiration. The reason of this our author considers to be, that respiration is a function incomparably more laborious in fish than in land animals; the first being obliged to employ only the very small quantity of air which is contained in the water that traverses their gills. It thus requires a more energetic nervous influence.

In the *carp*, besides the longitudinal medulla, resembling the medulla oblongata, there are four successive enlargements, in addition to the olfactory lobules. The first, after these, is double, and corresponds to the cerebral hemispheres. Puncturing it causes no convulsions, its removal stupifies the animal, and apparently deprives it of sight and hearing; it gives origin to no nerves, and it unites with the olfactory lobes.

The second pair produces convulsions when irritated, and gives origin to the optic nerves. These are the optic tubercles, long erroneously called the optic *thalami*; but now acknowledged by M. SERRES and all the latest writers, to have been correctly pointed out by Spurzheim as identical with the *corpora quadrigemina* of the human subject.

The third enlargement is single; it gives origin to no nerves, and produces no convulsions; its removal produces the same disturbance in the harmony of the movements of the animal, which were previously observed by M. FLOURENS in that of the cerebellum of the mammifera. It is considered identical with the last named organ.

The fourth enlargement consists of a middle tubercle and two lateral masses; when punctured, it produces convulsions in the respiratory organs; (viz. in the opercula;) it supplies all the nerves of the opercula; its removal, in fine, stops the motions of respiration. It is therefore considered to be a cerebral organ of respiration, and to correspond to that part of the medulla oblongata which gives origin to the respiratory nerves in man and quadrupeds. The section of either lateral mass suppressed respiration on that side, and the removal of the whole, or the simply slitting the middle portion longitudinally, destroyed respiration altogether.

In the *eel pout*, (la lotte,) there were: first, two ganglions representing the hemispheres; next, two others, being the optic tubercles; and lastly, the cerebellum, being a single body. Two lateral enlargements of the medulla oblongata were here found to be the organ of respiratory influence. The bream, the tench, and several other species of the genus cyprinus, resembled the carp, both in structure and in the effects of excision of these parts.

In the pike, there was no respiratory lobe; the cerebral hemispheres were here larger, and the effects of their removal more striking.

In the eel, there are five successive organs: the two first pair of lobes our author considers to be both olfactory lobes; the next the hemispheres;

the next the optic tubercles, and the next organ a single cerebellum without respiratory lobes.—*Experiences sur la systeme nerveux, par P. Flourens.*

5. *Cicatrization of wounds of the brain.*—In the course of M. FLOURENS' experiments, he had frequent occasion to witness the healing of wounds inflicted on various parts of the brain. He subsequently repeated some of these operations, with the express view of observing the manner in which injuries are repaired. His conclusions, most of which appear fully warranted by the details with which he has furnished us, are as follows:

Wounds of the brain with loss of substance, are followed by a fine and smooth cicatrix of the mutilated surface.

Wounds producing simple division, merely unite by the immediate reunion of the divided parts.

When a ventricle is deprived of its superior paries, the cavity is again completed, and the surface which covered it, renewed, by the extension of its lateral parietes.

When the destroyed substance is re-produced, the animal regains the functions of the part removed; unless the amount destroyed exceed certain limits. M. FLOURENS judges of this very difficult question by the fact that the animal recovers to a partial extent, from the stupor which had been originally produced by the injury. In one case, also, the animal recovered the use of an eye.

New bone and new skin are formed; and, as our author says, new *species* of them. While cicatrizing, the wound is protected by a crust of some sort; either, as is most commonly the case, by a stratum of dried blood, or, if this be removed, by a portion of dried lymph, or by a piece of bone or skin. Great abundance of a transparent lymph is found beneath this protecting substance, and it escapes when an opening is made. The healing surface is covered with *lardaceous* granulations, and thickly bestrown with red points and streaks. The experiments were made on ducks and fowls.

6. *Functions of different parts of the organ of hearing.*—The intricacy of this organ, as well as the variety of its forms in animals of different tribes, have long excited the wonder of the curious.

M. FLOURENS has succeeded in extracting or destroying, with much less collateral injury than could have been anticipated, the different parts of the organ of hearing, in pigeons. After removing the skin, muscles, ligaments, and a few small bony pieces, the membrana tympani comes fully into view, and can be easily destroyed. The first three bones can be separated afterwards, as well as the membranes covering the foramina rotundum and ovale. By leaving the larger and posterior portion of the membrana tympani, the stapes can be dislocated from the foramen ovale and turned in another direction. The semicircular canals and the imperfect cochlea lie posterior to the tympanum; and access to them may be had from the external surface of the cranium, by cutting through a structure of cellular bone. Finally, a small imperfection exists in the bony envelope of the vestibule, in the direction of this cellular portion of the bone; and

Mr. F. succeeded in introducing a needle by this route, so as to destroy the sacs contained within the vestibule, without injuring its parietes.

Neither the destruction of the *tympanum*, nor that of the *three first bones*, materially injured the hearing. By the removal of the *stapes* it was much enfeebled. The destruction of the *membranes* covering the *foramina rotundum* and *ovale*, enfeebled it still more. The restoration of the stapes, while still in connection with the larger half of the membrana tympani, restored a portion of the power of hearing. The division of the semicircular canals apparently rendered the hearing confused and painful; and produced the singular effect of a violent and rapid agitation of the head from side to side. The removal of the immediate covering of the vestibule did not materially affect the hearing. The injury done to the contents of the vestibule, on the other hand, affected the hearing in a degree precisely proportioned to its extent; and the destruction of the whole of its contents completely put an end to the function of hearing. Wounds of the vestibule were not materially painful; while those of the semicircular canals were acutely so, and produced the singular agitation above alluded to.

The destruction or removal of any of the parts internal to the first three bones, though not immediately followed by the destruction of hearing, were uniformly productive of that effect, after a longer or shorter period of time. Of these parts, the stapes was that which the power of hearing survived the longest. These experiments were tried on both sides at once; and the bird was blindfolded, and a screen placed between her and the means by which sound was produced; with other precautions to prevent the animal perceiving any cause of disturbance by means of her other senses.

7. *Singular agitation of the head, produced by the section of the semicircular canals.*—This effect, mentioned above, gradually subsided: but was reproduced the moment the animal attempted to perform the slightest movement. The pigeon saw, heard, and appeared to preserve all its intellectual and sensitive faculties. When, however, the agitation became violent, all regularity of motion was at an end; and the bird appeared to be in a state resembling that of a man rendered giddy by long turning round on a pivot.

8. *Action of poisons on vegetables.*—Mr. F. MARCET has found that poisons act on vegetables in a manner very similar to that in which they affect animals. Thus various mineral substances appear to act by a kind of corrosive power, and some vegetable poisons in a manner more resembling that of a narcotic; if this language can be employed in speaking of an application made to a being possessed of no nervous system. Arsenic, copper, lead, mercury, tin, baryta, potass, and sulphuric acid—all poisoned kidney-beans; and arsenic was discovered in the leaves and flowers.—*Lond. Jour. of Science.*—*Edinb. Jour. of Sciences, and Lond. Med. Repos. for Nov.*—1825.

9. *Quantity of blood in the whole body.*—Dr. KRIMER, in a physiological essay on the blood, after much matter not apparently very original, reduces the estimated amount of the blood in the body, from 25 to 10 pounds.

We have not his reasons for this judgment; reading only a brief notice of his book, by M. Hollard, of Paris.—*Bulletin de Ferussac.*

10. *Generation. Spermatic animalcules.*—MM. **Prevost** & **Dumas** are busily engaged in this curious subject; which has long been thought so *unfruitful* by the greater number of medical men. Their results are highly curious. Not succeeding in their first trials made on warm-blooded animals, they have had recourse to frogs. MM. P. & D. endeavour to show, in a preliminary chapter, that their inferences are equally applicable to reptiles, birds, and mammalia.—We are obliged, for the present, to postpone their results.

PATHOLOGY.

11. *Disease from spurred rye.*—Mr. **Theodore F. King**, house surgeon of the New York Penitentiary, describes 32 cases of morbid affection from this cause, occurring in that prison, in the fall of last year. Small livid spots made their appearance on one or both of the lower extremities, generally about the foot, without any local pain or weakness, or any perceptible general indisposition. After a few days, they could become more numerous, and extend up to the knee. Pain now occurred—in one case very severe; and in some instances, the patient lost the use of his lower extremities. The pulse was feeble, and seldom exceeded 100 in a minute. The face had a peculiar livid appearance. No unusual heat of the skin occurred. The tongue was slightly coated and "very flabby." In several cases, there were considerable sores about the mouth, and, in two or three hæmorrhage from the gums; bowels generally regular; urine natural; death always preceded by "severe colicky pains;" usual duration of the disease about four weeks. *Ten* cases proved fatal. No mention is made of uterine pains occurring among sixteen females.

The only dissection made exhibited the intestines studded with dark, livid spots, in the greatest abundance upon the large intestines, and the stomach inflamed, with a discoloration upon the under and larger portion. The uterus was natural.

Has any one ascertained whether our ergot be or be not a different species from that of Europe? We have here, among thirty-two patients, not a single case of gangrene recorded.—*N. Y. Med. & Phys. Jour. No.* 16.

12. *Vomiting of a substance resembling chocolate.*—Dr. **Baillie**, saw a number of instances in which the stomach threw up a large quantity of a fluid resembling *cocoa.* (Chocolate, we presume, or *cacao.*) A quart would be discharged at a time; and frequently this would be repeated for months together. This condition of the stomach is sometimes connected with a diseased liver; but not unfrequently is apparently independent of it. In some instances it proved fatal; but in others, and especially in two cases, the complaint subsided for several months at a time, and the patient enjoyed toler-

able health. This state (of alternate relapse and recovery) continued many years. In one case Dr. Baillie examined the stomach after death. It was very capacious, and was half filled by this brown fluid; but did not appear to be at all diseased in its structure. The neighbouring viscera, as the liver and spleen, were, *as far as Dr.* Baillie *recollects*, (this does not sound like the great morbid anatomist,) perfectly sound. The fluid would appear to be formed by a diseased secretion of the inner coat of the stomach. In some cases the power of digestion appears entirely destroyed, and the patient becomes pale and emaciated; though no local disease can be detected by an external examination. The disease is little affected by remedies. Tincture of kino or catechu, with laudanum, at the same time preventing costiveness, and, in one case, the Bath waters, were remedies, which "seemed to produce some benefit."—*Lectures and Observations in Medicine; by the late* Matthew Baillie, *M. D. &c.*

13. *Non-contagious nature of yellow fever.*—Dr. Costa, who had been physician to a Lazaretto, at Barcelona, read a memoir before the Royal Institute of France; in which, after reciting many facts and observations, to prove the yellow fever not to be contagious, he proceeds to offer, in conjunction with MM. Lassis and Lasserre, to *wear the clothes* of persons who shall have died of this disease at Havannah; the clothes to be sent to France, hermetically sealed, and no means of disinfection to be used.—*Revue Medicale, Aout.*

14. *Hydrophobia, from a cause other than the bite of a rabid animal.*—Dr. Whymper has published a case, in which a soldier, while in a violent perspiration, plunged into the sea, and remained in it for an hour and a half, in search of some fishing tackle. He was affected with violent symptoms, entirely resembling those of the above named disease; of which he died after about three days.

Dr. Whymper mentions as an exception, the absence of the *cupiditas mordendi;* but describes gnashing of the teeth, as liable to have been mistaken for it. This was exactly the case in the only unquestionable instance of this rare disease, which has occurred under our own view.—*Lond. Med. & Phys. Jour. Nov.*—1825.

15. "*Irritative fever,*" *from wounds, at Plymouth Dock Yard.*—Dr. John Butter, has published a work in 300 pages, on a most singular and a fatal epidemic, if so it may be termed, which occurred among the workmen at Plymouth Dock Yard, in 1824. All the patients became ill after receiving injuries, frequently of a trifling nature. The general character of the disease was "that of excitement of the nervous, absorbent and sanguiferous systems." Injuries, such as the crushing of a finger, the scraping off of a piece of skin, or a puncture with a dissecting needle, (as in the case of Dr. James Bell, the surgeon to the Dock Yard,) were followed by fever accompanied by 1st, inflammation of the absorbent system; 2dly, cellular inflammation and suppuration; 3dly, erysipelas and vesications and sometimes gangrene; 4thly, erythematous patches; and 5thly, intense local pain,

without redness. The men generally continued at work for some time after injury was received. *Most of the cases* terminated fatally within 15 days. The attack was "ushered in by chilliness or shivering, succeeded by a quick pulse, increased heat, disordered functions, nausea, sickness, fainting, and diminution of strength." It generally became typhoid in its course, and was frequently considered to be common fever, till after the abrasion or other slight local injury was recollected. The local inflammation was in every instance of an erysipelatous or erythematous nature; with a strong tendency to gangrene.

The dissections showed great marks of visceral irritation; as abscesses, &c. &c.; and in the two autopsies given in the review from which we quote, there was a violent mucous *enteritis*.

The writer of this note has twice seen erysipelas epidemic in an hospital; in most cases supervening on wounds, in others apparently constitutional. —*Vide Lond. Med. Repos. Nov.* 1825.

16. "*Dry Belly-ache*" *of the West Indies. Hepatic ileus.*—Dr. **Anthony Musgrave**, of Antigua, believes that this disease has been neglected by writers; having been generally classed along with colica pictonum. Its whole pathology and treatment are complete *terra incognita*, and a pupil of the English school is totally unprepared to control it. It is perhaps the severest, in point of suffering, to which the inhabitants of the West India isles are subject; and, notwithstanding Dr. **Chisholm**'s assertion to the contrary, has been for several years, of very frequent occurrence in Antigua.

The patient, at an early stage, complains of an uneasy sense of distension behind the ensiform cartilage; of loss of appetite, a feeling of listlessness, and of disturbed rest. A slight expression of anxiety is visible in the countenance, his tongue is clean, his skin cool and comfortable, his pulse either unaltered, or reduced in frequency and increased in strength. His urine, "*if examined, is probably*" high-coloured and scanty; he affirms his bowels to be regularly open. This may continue for a week or more; then the pain increases, shooting upwards across the chest, nausea, vomiting of porraceous matter, an annoying, twisting pain about the umbilicus, occur. In about 24 hours from this, constipation is complete, and excessive irritability of the stomach takes place. No bile is now discharged; and bilious stools, in the more advanced stages, are *a peculiarly favourable indication.*

The tongue is nearly clean, or with "frothy vesicles over a whitish surface, which can hardly be said to be coated." Contraction and acceleration of the pulse, febrile heat and a parched tongue, with an unsubdued constipation, enlargement and soreness of the abdomen, hickup, cold perspiration in the extremities, hurried respiration and the subsidence of the pain—these are signs of the greatest severity, and of the approach of death. Enormous liquid motions, having a highly offensive smell, are discharged with great violence, within a few hours of the close.

Relief was seldom found, in our author's practice, till the mouth was mercurially affected. The best symptom, besides general moderation in the whole disease, is the discharge of copious bilious stools, variously vitiated.

Dr. **Musgrave**, attributes this disease to the use of rum. Hepatic congestion was found in all the autopsies, and marks of intestinal inflammation and its consequences, in a *majority* of cases; and the termination of the disease is very commonly by mortification. Some cases afforded "little evidence of visceral mischief," except in the liver, which was as above. The number of cases dissected was not large.—*Lond. Med. Repos. Nov.* 1825.

17. *Nature of the pustules in Small Pox.*—Mr. M. L. **Deslandes**, in a memoir on this subject, comes to the following conclusions.

That the principal means of adherence between the cutis and epidermis is afforded by the secretory ducts which open on its surface.

That the sebaceous matter which is discharged from these ducts may be the residuum of the evaporation of the matter of perspiration.

That the depressions visible on the skin, when beginning to swell, are owing to the attachment of these ducts or tubes. That this is the cause of the central depression of the pustules of small pox.

That each pustule has for its basis one or more excretory duct.

That pustules are either *infiltrated* or they are minute *abscesses*: (infiltrées or abcedeés; a distinction much like that of Mr. **John Hunter**, between abscess *in* a part, and abscess *of* a part.) The infiltrated pustules are flat, and penetrate much more deeply into the skin than the other species. They are the most dangerous, and particularly affect the face.

That there is sloughing in almost every pustule of small pox; and that the large crusts which frequently separate from the skin, are really extensive sloughs of the surface of the cutis.

That in all small pox there is considerable absorption of pus.

That the black colour of the sloughs arises from exposure to the air.

That suppuration commences very early; generally on the second, or even the first day.

That the areolæ of these pustules always lose their vermilion colour in proportion to the period of time elapsed since the commencement of the disease.—*Revue Medicale, Sept.*

18. *Ulcers of the Intestines in fevers of long duration.*—Dr. **Trollier**, of the Hotel Dieu of Lyons, has given accounts of two subjects, in which he found ulcers of the mucous membrane in every stage at the same time, from their first commencement to such a complete cicatrization as left no other proof of their existence than a faint brownish circle; marking where the thickened edge of the ulceration had first been. The accounts are such as we cannot impeach, without attacking the author's veracity, or without a far more minute examination of the mucous membrane, than is generally made among us. Dr. T.'s observations are only part of a copious list by different authors, which this place does not afford sufficient room to describe.—*Archives.*

19. *Natural colour of the mucous membrane of the Stomach and Intestines. Is redness in them a proof of disease?*—Those who have been in the habit of attending the Philadelphia Medical Society during the last two or three years, will well recollect many debates upon the fundamental principles of the doctrines of **Broussais**; or rather upon the question, whether many of the symptoms of fever were owing to an inflammation of the mucous membrane of the alimentary canal. To the upholders of this belief, were constantly objected the observations of Dr. **Yelloly**, published in the Medico-Chirurgical Transactions, and those of Dr. **Parrish**, of this city, made on hogs bled to death. In all these cases, and whatever the disease or injury of which Dr. **Yelloly**'s patients died, redness, more or less extensive, was found in the stomach; and it was inferred from this, that this discoloration was by no means a proof of disease. Another argument was drawn from *stains;* and a piece of dura mater stained with blood, was exhibited in the society. Most of Dr. **Yelloly**'s cases were accompanied with febrile symptoms of that sort which Dr. **Broussais** and his school refer to a mucous gastritis or gastro-enteritis; and of those who suffered a violent death, as well as of the hogs examined by Dr. **Parrish**, we are not told whether they had *taken food;* which circumstance, according to Mr. **Billard**, is at all times competent to produce redness. (It is proper to remark, that, notwithstanding the very high importance of this inquiry, the doctrine of mucous gastritis does not rest exclusively on redness, but on many other appearances.) The author, whose name we have just cited, and of whose conclusions we are about to present an analysis, is a *Student* of Medicine; and a house pupil of the hospitals of Angers, in France. His researches are apparently an honourable example of diligence and industry—of the eager and careful employment of opportunity; and of a philosophical caution, and yet a promptitude in drawing inferences.

To discover the state of the mucous membrane during health, is obviously a task as difficult as it is important. In the strict meaning of the term it is perhaps absolutely impossible. "The crimson house of life" is too well guarded from our sight, to permit us to know what is the condition of its interior during life's existence. Unless some poor fellow's stomach be opened, upon the field of battle, for example, and the surgeon have leisure enough to inspect its interior, a thing of very improbable occurrence; we shall know nothing of the inner coat of that viscus, while yet in its living state. But for our pathological researches, it is sufficient to know what are the appearances left *after a death* produced by some cause which could not have inflamed the inner surface of the stomach. This task is also difficult, from the extensive sympathies of the organ, by none so fully developed as by those who have caught ideas from Dr. **Broussais**. We shall show with what materials Mr. **Billard** has endeavoured to settle this point.

Of healthy looking *fœtuses* there is little doubt, particularly as they are generally destroyed by accidents external to them. The inferences are besides confirmed by the constancy and similarity of the results. A child at the *full period* was killed during delivery; one at 22 months of age, by an injury of the head, during the existence of good health. The next died of acute arcahnitis, of 5 days duration—not quite so clear a case, we should think; and accordingly an unusual redness was found in the duodenum, the rest of the alimentary canal resembling that of the others. Another child was killed by a musket-shot, three more by the bursting of a cannon, a young man by throwing himself from a window, another man by an injury of the chest which extinguished life within an hour, another by a fall, which produced a rupture of the aorta, another by hanging himself, and another by suffocation from eating too fast.

Having thus given a view of the necessity and the nature of the evidence adduced by Mr. Billard, to confirm the applicability of his observations, the limits of this part of our task will permit no further abstract, excepting a general statement of his results.

The colour of the *stomach* in the *adult* is usually *whitish;* that of the *duodenum* and *jejunum white, verging to ash-colour;* this ash-colour terminates at the *conclusion of the ilium,* and the membrane becomes whiter in the great intestine. *Yellow patches* are sometimes observed, which appear not to be inconsistent with a good state of health.

In the *embryo* and *fœtus,* the membrane is *rose-coloured;* except in the large intestines, where it is generally *green*—supposed to be stained so by the meconium.

In *infancy,* the mucous membrane is of a *milk-white.*

In *adolescence,* of a *less brilliant white;* and, in the *adult,* of a *white, verging to ash.* In *elderly persons,* the ash is more striking; except in extreme age, the colour in which is omitted by those from whom we are compiling.

If there be any impediment to the circulation, the veins situated beneath the mucous membrane, are enlarged; and their situation and blue colour renders them very easy to distinguish from redness of the membrane itself; as is remarked by all the late writers.

During digestion, there is a sudden and transient flow of blood to the stomach and duodenum, and sometimes the commencement of the jejunum, producing a rose-colour. This may be found after death.

Of the discrepancy among authors relative to the natural colour of the stomach, one may judge from the following list:—Sabatier calls it a *reddish purple;* Bichat, *reddish;* Gavard, *grey, verging to red;* Boyer, *greyish, with a shade of yellow or red;* Chaussier, Adelon and Cloquet, *marbled red;* Marjolin, *liable to brown or blackish spots;* and Beclard, *varying from white to red.*

Our author further illustrates his views, by quoting and analysing the cases given by Mr. Rousseau, in the *Archives de Medicine,* which he considers coincident with his own.

This paper contains much other curious matter, relative to the usual appearances of the *valvulæ*, the mucous glands, &c. for which we are not allowed sufficient space.—*London Journals.*

20. *Ovarian Abscess.*—The following communication has been politely addressed to the Editors, by Dr. Taylor, of this city.

"On the 26th of January, 1826, I was called to visit Mrs. A. B. aged 35 years, who had, for the last four or five years, been suffering, (as was supposed,) from gradually increasing dropsical symptoms. The previous history of the case, as detailed by the patient, was somewhat singular. She had been under the direction of some respectable physicians of this city, by whom she had been treated for ascites. During the course of the treatment, recourse was had to the operation of paracentesis abdominis; by which merely a small quantity of blood and serum was evacuated. She subsequently entered the Hospital, and there underwent the same operation, with a similar result. From these circumstances, it was considered as a case of encysted dropsy, and treated accordingly.

At the time of my first visit, she was labouring under a harsh cough, accompanied with mucous expectoration, together with great dyspnœa, particularly on motion. Much difficulty was also experienced, when lying in the recumbent posture, so much so as to render it necessary to prop her up in bed. The pulse was weak and somewhat irregular; and she complained much of flatulency and constipation. Her abdomen was unusually large; presenting the appearance of a person labouring under ascites: there was also some œdema of the lower extremities. Fluctuation was very indistinct.

In this urgent state, I ventured to encourage some hope of relief, by the use of purgatives of gamboge and super-tartrate of potash; inasmuch as the state of the bowels indicated their employment as an incipient step in the treatment. After the operation of the first purgative, she was soon able to lie in a horizontal position, and to walk across the room. The purgatives were continued for a day or two longer, apparently with much advantage. Diuretics were exhibited for a few days, and a copious diuresis was the consequence. On the 31st of January, the patient was submitted to the care of my friend Dr. Wiltbank, who deemed it proper, from the then existing symptoms, to administer tonic remedies, which were persisted in until her death, which unexpectedly took place on the 3d of February.

From the interesting history of the case, we were particularly desirous of making a *post mortem examination:* which was accordingly proposed, and was submitted to by the friends of the deceased. Dr. Wiltbank and myself commenced the dissection, by making a longitudinal incision along the whole course of the linea alba. In the first place, the anterior part of the abdomen presented an unusual degree of thickness, at least two inches; although the skin and adipose substance appeared very thin. Upon continuing the dissection still further, under an expectation of entering the cavity of the peritoneum, we were considerably surprised at the ejection of a large stream of genuine pus. The unexpected and sudden discharge of this immense quantity of purulent matter induced us to apply for aid to some more experienced anatomists. In consequence of which, Drs. HORNER and HODGE were called upon, and politely proffered their services. The whole of the pus being discharged, which amounted to the almost incredible quantity of *four gallons*, we proceeded to the examination of the tumour containing it. On separating it from its adhesions to the surrounding parts, it was discovered to be the right ovarium, completely altered in its organization—occupying all the cavity of the abdomen below the margin of the thorax,—protruding the intestines, liver, &c. very high within the cavity of the ribs; and when removed and emptied of its contents, weighing *seventeen pounds*. The vascularity of the tumour was remarkable,—arteries and veins, as might have been conjectured, running in every direction.

After having completed the examination of the ovarium, our attention was next directed to the state of the uterus; which, contrary to our expectation, presented a perfectly natural and healthy appearance. The other contents of the abdomen were found, with the exception of some adhesions and thickening of the coats of the intestines, in a natural state.

The tumour has been preserved, and presented to Dr. HORNER, who has granted it a place in the valuable Anatomical Museum of the University."

OTHNIEL H. TAYLOR.

PRACTICE OF MEDICINE, THERAPEUTICS, AND MATERIA MEDICA.

21. *Remedial effects of Galvanism.*—The application of galvanism to the treatment of disease has, at various periods, occupied the attention of physicians, and been often regarded as, of itself, capable of curing many diseases. As too often happens however to other means, some failures caused it to be nearly abandoned, and nothing was heard of its virtues until within a short time. M.M. BAILLY and MEYRANX have lately called the attention of the profession to this powerful therapeutical agent, and more particularly to a new method of introducing the fluid. The memoir before us is the mere *avant coureur* of a more elaborate work, which these gentlemen intend publishing soon on the subject. Their method consists in introducing the galvanic fluid through the medium of the acupuncturation needles as conductors. The diseases cured are rheumatism, neuralgia, and chorea. We shall transcribe here in detail, the case of chorea, in order that the reader may form some idea of the efficacy of the method, and of the manner in which the galvanic fluid is applied.

"Miss —— aged 12 years, having suffered much, at the period of dentition, was seized with convulsive movements, which at first assumed the intermittent type, and affected only the muscles of the right cheek. Soon after, the convulsions became almost continued, and extended to the shoulder of the same side; the parts affected were very sensible. Baths of a moderate temperature, a mild regimen, and pills composed of camphor and valerian, were prescribed without benefit. At the age of seven years, all the characteristic symptoms of the disease became more intense; opiates, vegetable narcotics, assafœtida, calomel, aggravated the muscular disorder. During two years, *flying* blisters and moxas on the lateral parts of the spine were likewise ineffectually used.

The mother of this young lady came one day to consult us at the hospital of La Pitié. The patient presented the following symptoms. The system of nutrition was feeble and languid; the muscles, particularly on the right side, which had fallen away most, were flabby. The disorder of the locomotive system was apparent only on one side; but for two years had made considerable progress; either owing to the successive development of the disease, or to the influence of an energetic stimulation produced by medicine. The contractions and relaxations were continual and rapid; producing singular convulsions and grimaces. The patient did not stutter, but pronounced every word distinctly. She had no fever; and felt no pain. Sometimes, however, she experienced in the affected part, a sensation of numbness, pricking and formication. She complained neither of headach nor dizziness; but could not apply herself long to any thing. Her sleep was light, and frequently interrupted by convulsive movements.

Galvanism was at first administered by simple communication, without the introduction of needles; the affected leg and arm being immersed in two tubs of warm water, in which the two conductors (*rheophores*) terminated. With six plates, the galvanic action was almost null; the patient scarcely feeling a pricking in the parts which served as intermediates to the fluids. We increased the action by adding four plates. Immediately after, agitation of a part of the muscles, slight trembling of the leg, supervened. By rendering the current continued, a sensation of pricking in the passage of the fluid was experienced. The third day, the same operation was repeated in the same manner. These two galvanizations, however, not producing any advantageous change, we prevailed on the patient to submit to the introduction of galvanism, by means of the needles. One of these was consequently introduced near the first and second cervical vertebræ; and a second near the division of the brachial plexus; as it was between these two points, that the muscles were most convulsed. Three pairs of plates developed a sufficient quantity of fluid to excite manifest contractions, as well as pain. The third operation which was continued twenty-five minutes, seemed to diminish the muscular contractions, and the patient informed us two days after, that she derived considerable relief from it. She requested the next day, to be again galvanised. The operation was prolonged during half an hour, and six settings were sufficient to cure a disease, which had resisted the most energetic means that medicine commands."

Agreeably to Drs. Bailly and Meyranx, the present mode of employing the galvanic fluid is not only more powerful than the common method, but more simple in its application. It moreover saves time; and by it we graduate at will and in a precise manner, the necessary quantity of fluid. The effect also, is more local, and may be applied to any part of the body. —*Archives Generales, Sept.* 1825.

Drs. BAILLY and MEYRANX do not seem to be the only physicians in Paris, who have resorted to this method of introducing the galvanic fluid; for it appears from Mr. SARLANDIERE's recent work entitled "Memoire sur l'Electro-Puncture, &c.," that he employed it, with this difference, however, (if it be a difference) that Drs. B. and M. apply the needles to aid the action of the pile; whereas Mr. S. resorts to galvanism, in order to promote the action of the needles.

In protracted sleep, galvanism has been very successfully used by professor HUFELAND. The subject in whom it was tried, was a young woman twenty years of age, who had slept constantly for six weeks, without taking any nourishment except a little barley water, which was forced down occasionally. All internal means were applied in vain, till galvanism was resorted to; this had no effect whatever, until one conductor was placed upon the epigastrium, and the other in the left ear. These had not been in operation more than two minutes, before colour returned to the face, the eyes opened, the patient raised up and said distinctly "father." From this moment she continued to improve, and had no relapse.—*Hufeland Prac. Heilk. and Med. Recorder, Jan.* 1826.

22. *A case of Gravel cured by Cider.*—Dr. DOUCET, of New York, has published a case illustrative of the effects of cider in the cure of gravel. The patient experienced colic, spasms, and tenesmus, which after five days, degenerated into diarrhœa; he, however, recovered. Some weeks after, he was attacked with the same complaint; "besides a painful sensation in the lumbar regions, with spasmodic movements; a numbness in the right inferior extremity, and a retraction of the right ventricle (*testicle?*). All the pains seemed to terminate in the right thigh; the paroxysms lasted six, seven, eight, nine, or ten days; then ceased and returned in two, three, four, or five weeks." Some months after, he passed much gravel; but when Dr. D. saw him, (July 25th 1825,) he had not passed any for three months; and attributed this exemption to the use of tar water, of which he drank freely. The pains, however, were then violent, and he evacuated, per anum, a thick glairy matter with mucus; after which, he experienced considerable relief. The evacuation of this matter was promoted by means of mild aperients, and of enemata, which brought away large quantities of calcareous matter from his bowels. The gravel returned, and the Doctor was about adopting a chemical mode of treatment, when the patient, after reading in an Albany paper, of a cure effected by the use of new cider, expressed a desire to make a trial of it. He drank *one gallon in twenty-four hours* since the 10th of August, and was completely cured.—*Med. Rec. for Jan.* 1826.

We are not informed, however, when he ceased taking the remedy, and what effects it produced on the kidneys and bowels; all of which circumstances it was necessary to detail.

23. *On Piperin in Intermittent Fevers.*—Doctor **Gordoni** has lately published some observations tending to prove the efficacy of Piperin in intermittent fevers. Seven cases are given in detail; in many of which the bark or sulphate of quinine had been administered ineffectually. From these facts Dr. G. concludes, 1st. That *Piperin* cures intermittent fevers in doses of eight and even six grains. 2nd. That administered in powder, it has a more powerful action than in pills. 3d. That it cures fevers that have resisted the sulphate of quinine. 4th. That it prevents relapses more effectually than the quinine.—*Annali Univers. de Med. Milano, Giugnio,* 1825.

24. *Prenanthes Altissima;—an antidote to the virus of the Rattlesnake.*—Some observations have been lately published in a valuable cotemporary, by Dr. **James Hubble**, on the Prenanthes Altissima, "which is universally believed by the inhabitants of certain sections of our country to possess the power of eliminating or counteracting the *virus* produced by the bite of the rattlesnake. (*crotalus horridus,* Lin.) It is called by the people, snake-weed; which name it has probably received from its reputed virtues in curing the bite of that animal." The following case, among others, is given: "G. W. S. aged about fourteen, was bitten by a rattlesnake under the malleolus externus. As the prenanthes could not be immediately obtained, the most excruciating pain, with great swelling and discoloration supervened, attended with nausea, vomiting of bilious matter, and remarkable prostration of strength. By an external and internal administration of the prenanthes, relief was promptly obtained, with a subsidence of pain, tumefaction, and discoloration."

"The mode of administration is simply this: If the bite be recent, an external application of the stalks and leaves bruised together, is sufficient; but if constitutional symptoms have supervened, in addition to the above external application, a strong infusion of the plant is considered necessary to be taken freely."—*New York Medical and Physical Journal. Jan.* 1826.

25. *Effect of Cupping Glasses applied to Poisoned Wounds.*—At a meeting of the Academy of Medicine (Section of Medicine) of Paris, held on the 2nd of August, 1825, Mr. **Barry** read a note relative to some experiments made by him, and which tend to prove that cups applied to wounds recently poisoned, prevent the absorption of the venomous matter. These experiments consisted in wounds inflicted on the back and thighs of adult rabbits, and into which, when the hemorrhage had ceased, two or three grains of powdered strychnine, or three drops of hydrocyanic acid were introduced. Three, five, or ten minutes after, M. **Barry** applied cups on the wounds, and renewed them as soon as they fell. By this means he prevented the animals from experiencing the phenomena usually attending poisoning with these substances; whereas the animal died when the cups were not applied. In one of these cases M. **Barry** had waited, before applying the

cups until convulsions had already appeared; nevertheless he succeeded in putting a stop to them, and curing the animal.

The communication of these facts led M. PARISET to inform the society, that he had, that day, received from M. MORICHEAU-BEAUCHAMP, of Poitier, the account of a case presenting some analogy to the preceding. It was that of an individual bitten by a viper, and who experienced none of the symptoms usually attending these accidents. The means resorted to were leeches applied to the wound. The first leeches applied, died very soon after sucking the blood; the sixth survived, although it had drawn more blood than the preceding ones.

M.M. ORFILA, ADELON, and LAENNEC, were appointed, to ascertain by experiment, the validity of the facts communicated by M.M. BARRY and PARISET.—*Archives Generales, Sept.* 1825.

At a subsequent meeting of the Academy, M. ADELON read a report of M. LAENNEC, upon the above experiments of Dr. BARRY, by which we learn that their results have been confirmed by further trials, some of which were made with the white oxide of arsenic, hydrocyanic acid, and the upas tieuté. We learn this from the October number of the Archives Generales.

26. *Acupuncture in Gout.*—Mr. ANDRIEUX gives the history of a man, 49 years of age, who, for ten years, had been affected every six months with gout, which successively attacked the knees, wrists, and joints of the fingers. These parts had become deformed, and the inflammation at each paroxysm continued some time. In the month of December, 1824, the right foot became red, swollen, and very painful. Mr. A. introduced a needle under the skin, at the basis of the small toe, in such a way as to make it come out under the external malleolus. The relief was almost instantaneous, motion and pressure being borne without pain. In order to guard against the recurrence of the pain, Mr. A. introduced a second needle under the malleolus internus, which, after being allowed to remain in ten minutes, was, together with the first, removed. They were both strongly oxydised. The patient was now able to walk with facility; whereas, a quarter of an hour before, the simple contact of the bed clothes was extremely painful.—*Nouvelle Bibliotheque Medicale, Juillet,* 1825.

27. *Acupuncture in Suspended Animation.*-Dr. ANTONIO CARRARO relates, that in the presence of several persons, he plunged a young kitten, eight days old, into cold water. The animal was retained under until all motion had ceased. When withdrawn, the tongue protruded out of the mouth, and was covered with froth—the limbs were stiff—the heart did not beat, and all signs of life had disappeared. When plunged a second time into the water it sunk to the bottom. It was again withdrawn, exposed to the sun, wiped dry with warm clothes. Frictions on the abdomen were next resorted to; but none of these means producing any effect, acupuncture was performed about three quarters of an hour after signs of life had ceased. A needle was passed through the heart, the point resting on the dorsal

vertebræ. In less than five minutes the needle began to be slightly agitated, announcing a movement in the heart. This rapidly increased, and was soon followed by motion of the anterior extremities—next by the act of respiration, cries, and finally by movement of the whole body. Placed in its basket, the animal remained two hours in a very languid state, but at the end of this time, the mother having come to its assistance, warmed, suckled, and re-animated it. From this circumstance, Dr. CARRARO concludes, that this state of debility depended more on the coldness the animal had experienced in the water, than on the puncture of the heart. A month after this experiment the kitten enjoyed excellent health, and displayed all the vivacity of the species.

The same experiment was repeated many times with equal success; from which Dr. C. concludes, that the puncture of the heart is not only a useful, but a safe operation. He expresses his hope that in cases of asphyxia in human subjects, physicians will resort to it in preference to any other means.—*Annali. Univers. di Medic.* 1825.

28. *Colica Pictonum.*—The treatment of the colica pictonum has lately become a subject of warm discussion among the French physicians:—some advocating the notions of BROUSSAIS, and strenuously recommending the antiphlogistic plan—others adhering to the old method of La Charité, which consists in administering large and repeated doses of powerful antimonials and purgatives. In order, if possible, to settle this question, Mr. MIRAMBEAU, of Paris, has lately published in the Revue Medicale for Sept. 1825, some cases, in which antiphlogistics were resorted to ineffectually, and which were afterwards radically cured by the purgative plan. The disease, in all these instances, was occasioned by the use of water, impregnated with the carbonate of lead. We do not pretend to decide in this case; but we must confess that our experience and reasoning would lead us to prefer, were we ourselves the sufferers, the antiphlogistic and narcotic plan, rather than that of La Charité, whether prescribed in the form of the old *macaroni or mochlic*, or of common emeto-purgatives,—and sanctioned by the authority of DELORME, and the early physicians of that hospital, or by the more recent one of Mr. MIRAMBEAU.

29. *Employment of Caustic to destroy the Variolous Eruption.*—In the preceding number of this Journal we offered a short extract from a French periodical, containing an account of Mr. VELPEAU's method of cauterizing the variolous pustules. This method appears to have engaged, to a considerable extent, the attention of the French physicians, and particularly of M. MEYRANX, who read an elaborate article on the subject, to the Institute, on the 16th of August, 1825. This memoir is published in the September number of the Annales de la medicine physiologique. After remarking that M. M. BRETONNEAU, DUMERIL and SERRES, were the first physicians who called the attention of the profession to the *ectrotic* method, or therapeutical means of destroying the variolous pustule; and after indulging in some general remarks on the danger of small pox, &c. Mr. MEYRANX says, "The

numerous observations we have witnessed prove that cauterization, destroys the variolous pustules, only on the first and second day of their appearance. When resorted to on the third or fourth day, or later, it exercises no influence on their progress, and they go through their ordinary periods." When the caustic is applied the first or second day, the pustules disappear in less than twenty-four hours, leaving no other trace than a thin scale, which drying from the centre, falls off on the third or fourth day. Several methods are employed to effect this purpose: the one most usually resorted to, consists in washing the face with a solution of the nitrate of silver. On the subject of this method, which he denominates, *method of diffusion*, M. Meyranx makes the following remarks:

1st. The solution of the nitrate of silver, spread on the face covered with variolous pustules, acts on the diseased and on the healthy parts. A blackish crust, of more or less thickness, according to the chemical agent used, covers the pustules which are to be destroyed, compresses them, and allows the pus they contain to sojourn in them, and attack the mucous and even the dermoid substance.

2d. As the spaces separating the pustules are also cauterized, the cutaneous perspiration is suppressed.

3d. The pain is more acute, and of longer continuance. We have seen patients who found it almost unsufferable twenty-four hours after the operation.

4th. This process of cauterization becomes impracticable when it is necessary to employ it on mucous membranes, as the conjunctiva, lips, interior of the mouth; or on delicate organs, as the interior of the ear, the breast, genital organs, &c. One of its greatest dangers arises from the impossibility of circumscribing, by whatever care, the action of the caustic.

5th. This process exercises no influence on the march and development of the variolous pustules. After the operation, the cauterized tissue, assumes a dark grey colour, which the next day changes to black." This process moreover, does not remedy the deformity, which it was intended to prevent.

In respect to the best method, Mr. Meyranx remarks, "experience has taught us that the surest method for destroying promptly the variolous pustules, is to open them successively, and to cauterize them with a portion of nitrate of silver, or with the end of a port crayon, armed with a piece of the same caustic, proportioned to the size of the pustule." Mr. M. calls this the *method of introduction*. He prefers opening the pustules with a lancet, to cutting them with a pair of crooked scissors, which is impracticable to do in the early stage of the disease, owing to the smallness of the pustules. It is infinitely more advantageous to make use of the port crayon, than to plunge several times into the opened pustules, a stillet, first dipped into a solution of the nitrate. This process, which has succeeded in the hands of Mr. Velpeau, does not appear to Mr. Meyranx, to penetrate deep enough, whilst in many instances the solution extends much beyond the limits of the pustule.

M. Meyranx next examines the effects produced according to the kind of caustic used. He decidedly prefers the nitrate of silver, employed in the above way. Whilst using the caustic to destroy the pustules, Mr. M. does not neglect the other means required for the treatment of the disease. He notices that the operation is useful, only when the inflammatory action of either of the three principal viscera, or the skin, has been moderated by antiphlogistic remedies.

When inflammation of this latter tissue predominates, the pustules that are cauterized, become more irritated, and the suppuration sometimes continues longer. Our author further remarks that the operation appears to exercise considerable influence in preventing and even arresting tumefaction of the part of the body on which it is performed. "Pustules supervening on the most delicate and sensible parts, fade, without the least accident by means of the caustic." He has resorted to this remedy for the purpose of destroying pustules on the velum pendulum palati, on the edges of the eye-lids, interior of the nose, and meatus auditorius.

30. Dr. Baillie's *Unpublished Works.*—Dr. Baillie directed in his will, that one hundred and fifty copies of his two Introductory Lectures to the Course of Anatomy, his Lectures on the nervous system, and a short account of his experience in the practice of medicine should be printed, but not published. After giving a copy to each of his intimate medical friends, he bequeathed the rest to the Royal College of Physicians.

On complaints of the head, he observes, "many persons of both sexes are affected daily with headachs, of more or less severity, for many months and often for some years. They chiefly prevail towards the middle time of life, but occur often at an earlier period. They may take place in any part of the head, but are more commonly felt in the forehead, or over one eye, or in the back part of the head."

Dr. Baillie has seen no benefit from bleeding, either general or topical, in such cases. Temperate living, avoiding improper diet, the use of purgatives, as rhubarb and soap, and also bitters, calomel in moderate doses followed by Epsom salts and senna, once in two or three weeks, are useful. Some cases are obstinate under any treatment. Cutting the hair close, and the application to the head of a large sponge wrung out of cold water, often give great temporary relief.

Hydrocephalus.—Dr. B says, "I have known in my own experience of but *one case* of this disease being cured when fully formed. I have seen a few cases in which there appeared to be a strong threatening of hydrocephalus, that got well by the application of leeches and blisters to the head, and brisk mercurial purges: but I cannot determine, whether these cases, if less actively treated, would have terminated in true hydrocephalus, or not."

Tic Douloureux.—"I do not recollect to have seen any instance in which it has been *permanently* cured either by internal medicines, or by an operation.

Quincy.—Dr. B. recommends us to encourage suppuration in these cases, where one or two applications of leeches do not lessen materially the inflammation of the tonsils and velum pendulum palati. If suppuration be encouraged by inhaling warm vapour, the patient recovers more rapidly and with less pain; for the opposite plan often prolongs, without preventing, the suppurative process.

Phthisis.—He has known in the *course of his medical experience*, one or two cases of patients who recovered from phthisis, which was fully formed; and thinks they *might* have been common abscesses, not of a strumous character.

Angina Pectoris.—Most constantly depends on ossification of the coronary arteries, and admits no effectual relief from medicine. Two cases exactly resembling angina, depended on imperfect digestion, and the patients ultimately recovered.

31. *Measles.*—Dr. Geo. Hayward describes the measles of 1825 at Boston, as commencing in the latter part of January, and disappearing about the end of July. It began to yield in the beginning of June. It had nothing malignant but yet was of a severe character. There was a strong disposition to sloughing of the integuments after blisters. There was a greater disposition to pneumonia than is common after measles. Some of the worst cases of pneumonia succeeded the mildest attack of measles, and vice versa. The remedies both for the primary and secondary diseases, were emetics, blisters, warm bathing, inhaling aqueous vapour, mild expectorants, and cooling drinks. Cold water was freely allowed. Dr. H. informs us that both the measles and pneumonia were more fatal than in former epidemics. "In the cases of more than two hundred patients that came under my care with the disease the *last* season, blood letting was not employed in a single instance, and every individual recovered. How far the disease *this* season was rendered mild by the regimen, I leave to others to decide." —*New Eng. Journal, Jan.* 1826.

32. *Duration of Intermittents.*—M. Bailly has read to the Institute a Memoir on the duration of intermittent fevers, which after immense researches, he states to be as a mean about two weeks; supposing them to be tertians, as is the case with the great majority, we shall have seven or eight paroxysms for each individual. Mr. B. is satisfied, by post mortem examinations, that these diseases are dependent on internal inflammation; which not only accounts for their ordinary course and duration, but moreover warns the practitioner against the two early use of bark and tonics.

"Intermittent fevers, says he, examined in some thousands of patients, are not found to consist of nervous affections to be arrested at will by medicines or certain therapeutical processes. They have a course to follow, and certain stages to go through, and when they terminate under the employment of medical treatment, to which the honour of the cure is attributed, they only yield spontaneously to remedies which succeed because the disease is already on the point of disappearing."—*Revue Medicalé, Aout.* 1825.

33. *Hydrophobia.*—Professor Rossi has cured a case of Hydrophobia produced by the bite of a rabid cat. The wound was inflicted Oct. 22nd, 1824. In the beginning of December symptoms of the disease began to manifest themselves, such as melancholy, fondness of solitude, violent weeping, frightful dreams, loss of appetite, glistening eyes, red face and salivation. The left sublingual gland became enlarged. The sublingual gland was cauterized, on the 10th of Dec. by three applications of a heated iron. This operation was succeeded by some fever, which soon went off, and in three or four days afterwards the patient was restored to health.—*Lond. Med. and Phys. Journ.*

34. *Intus-susception.*—Mr. J. Morley recommends in decided terms the resort to mechanical remedies in cases of constipation, where pain in the umbilical region and other threatening symptoms remain or return, after evacuating the lower bowels by enemata. Mr. M. proposes to use crude mercury, which has grown out of fashion from not having been employed sufficiently early in the disease. Mercury, he says, will "soon pass through the whole intestinal canal, unless there be a serious obstruction; if it meets this obstruction there is a probability that it will be overcome by its specific gravity; not less than a pound should be given." Mr. M. next recommends very large enemata; three or four quarts of gruel should be thrown up. Mr. M. does not favour us with any details of his own experience, or that of others.—*Lond. M. and P. Journal, Oct.* 1825.

35. *Contagion of Croup.*—Dr. George Gregory gives an account of three cases of croup, which all proved fatal. He infers, that the disease was a contagious one. The following are the facts. The first patient was seized with a sore throat and scarlet eruption Nov. 30th. He had cough and difficult breathing on the 4th of Dec. Croup came on decidedly that same night, and he died twenty-four hours afterwards, i. e. the 5th Dec. On the 10th Dec. his brother was attacked with disease, and became decidedly affected with croup Dec. 17th, on which day he died. On the 19th a sister was attacked with cynanche tonsillaris. On the 20th the breathing became sonorous, and she died on the 25th. Dr. G. says, "it may remain a question how far contagion had any share in the production of the disease in the two latter cases," but he is resolved hereafter to separate the affected child (in croup) from the healthy members of the family. We doubt if it be possible to find a physician in the United States to admit the contagiousness of croup as unconnected with some other peculiar morbid affection.—*Lond. Med. and Phys. Journal, Oct.* 1825.

Dr. Gregory's idea of contagion as above expressed, is remarked on by W. Pretty, Esq. in a paper on croup, in the same Journal for January. "I have witnessed many severe and fatal cases of croup, after, or rather in conjunction with simple scarlet fever, and malignant sore-throat; and here

I have no hesitation in subscribing to the belief of its being contagious, but not as the primary disease. It usually came on after several days continuance of one or other of the diseases just mentioned, and seemed to owe its production to the extension of inflammation from the fauces to the larynx and trachea in young children, and they were, to the best of my recollection, exclusively the subjects of its violence:—it proved generally fatal."—*Lond. Med. and Phys. Jour. Jan.* 1826.

In the same Journal, **James Sym**, Esq. relates some "cases intended to illustrate the contagious nature of some forms of croup." This gentleman says, that in the "spring of 1824, ulcerated sore-throat, accompanied in some instances with scarlatina, became prevalent in the neighbourhood of Kilmarnock." A number of cases became complicated with croup, and of such cases I only met with one which terminated favourably. The disease seemed to be contagious among children; and he saw a fatal case in an old man, who appeared also to have taken it by contagion. "From what I observed," says Mr. S. "I concluded that the ulcerated sore-throat, which appeared to be closely allied to scarlatina, constituted the contagious part of the disease, and that the croup was occasioned by the extension of the inflammation at the margin of the ulcers, into the rima glottidis."—*Lond. Med. and Phys. Jour. Jan.* 1826.

36. *On the effects of Subcarbonate of Iron in Neuralgia; Amaurosis; Paralysis Agitans; and Chorea.*—In the number of the Edinburgh Medical and Surgical Journal for January, 1826, **Dr. William Belcher** has published a very interesting case of Neuralgia, complicated with amaurosis. The case presented the following symptoms. The patient complained of total loss of vision of the left eye, "his right possessing that function unimpaired; at the same time he was suffering exceedingly from acute pain of the temple, eye-ball, ear, cheek, side of the head, and upper part of the neck of the same side; this pain shooting in *radii* along the *pes anserina*, and affecting the temporal, facial, and cervical branches of the *portio dura* of the auditory nerve; the integuments of the face and scalp at that side tender; and the paroxysm aggravated and brought on by the slightest pressure, attempt at mastication, noise, or even by a current of air. He has had a remission every morning and noon, and a severe exacerbation towards evening. On further investigation, I ascertained the existence of well marked amaurosis, the dilated pupil immoveable and inobedient to the stimulus of light; the bottom of the eye of a jet black colour, and a glassy appearance; the superior palpebra was paralyzed and fallen down over the upper half of the eye-ball; he had been a fortnight deprived of vision, and twelve days before that, had suffered from the neuralgic affections before alluded to. Accompanying these phenomena, he had frontal cephalalgia, *gastrodynia matutina*, bitter taste in the mouth, furred tongue, hepatic fulness, epigastric tenderness, digestive derangement, with constipation, his pulse unaffected and slow, aspect languid and pale, much mental despondency at the idea of being blind so early in life."

When Dr. B. saw the patient, the disease had continued a month. The treatment consisted, first in correcting the condition of the primæ viæ by means of blue pill with *extr. colocynth.* in the evening, and saline mixture in the morning; whilst the stimulating vapour of *liquor ammoniæ pur.* as recommended by Scarpa, was resorted to. These remedies were employed three days, and succeeded in relieving the symptoms of digestive derangement. The subcarbonate of iron was now prescribed in doses of half a drachm, three times a day. This remedy was persevered in, from July 19th to August 15th, and proved completely successful in restoring vision, and removing the pain. The patient took in all fifty-two half drachms of the subcarbonate of iron.

Dr. Granville of London has also published in the London Medical and Surgical Journal for January, 1826, the account of a case of severe headach, terminating in *tic douloureux*. Various remedies were used, and as soon as the disease had been "reduced to its simplest element," or in other words, had become neuralgia, the carbonate of iron was administered and continued three weeks, when the patient entirely recovered.

The British practitioners have lately administered this remedy in chorea and other nervous diseases, with the most decided success. In the 13th Volume, Part 1st. of the Medico-Chirurgical Transactions, Dr. Elliotson has published a valuable paper on the medical properties of this article, and detailed several interesting cases: one of paralysis agitans, and eight of chorea; all of which were cured in a short space of time.

The subject of the first case was a man aged 28 years, and who had been affected one year. He had "constant shaking of the legs and arms. The intensity of the tremor varies. Till within the last week, the agitation would sometimes cease for a few hours, or even a whole day, but for the last week has been constant. At first, sometimes one leg was affected, sometimes both. He has pain in the head, loins, and legs. and vertigo, and cannot fix his attention." After using, ineffectually, ointment of tartarized antimony to the legs—oil of turpentine in large doses—sulphate of zinc—purgatives, &c. Dr. E. commenced the use of the subcarbonate of iron on the 3d of June, resorting occasionally, at the same time, to leeches to the temples, and applying a perpetual blister to the forehead. The cure was complete on the 17th of July. In a case of three years standing, occurring in an old woman. the remedy was unsuccessfully administered. We annex the following case of chorea. April 8th, 1824, "Elizabeth Powell, aged twenty-two years, ill with chorea six months, had the disease six years ago. The right side most affected, *pain of the forehead, especially on stooping* Has been bled and purged without benefit. ʒii. of the subcarbonate of iron every eight hours were ordered. On the 13th she was rather better, and on the 17th much better. Her speech was greatly improved, and she could hold any thing in her right hand. *The pain of the head was quite gone.* She afterwards complained of pain in her left side, which was removed by two bleedings. She was dismissed on the 18th, perfectly well." The other cases were treated with equal success, and for the most part, almost as speedily relieved.

In respect to the quantity, of the subcarbonate of iron, which may be administered, Dr. Elliotson remarks, "I have ascertained, by very numerous trials, that when the use of the medicine is proper, it may be given in far larger quantities [than is usually done by Dr. Hutchinson and others:] that two, three, and four drachms may by given every six, nay every four hours; that this dose of half an ounce may be at once commenced with, and does not require in order that it may be borne, to be reached by slow degrees, and that it may be continued many weeks without the slightest inconvenience." He further remarks. "When the medicine is proper, I believe there is generally no limit to the quantity which may be taken, except the unwillingness of the patient to swallow it, and the inability of the stomach to manage so heavy a mass. Neither headach, thirst, heat, foulness of tongue, griping, nor constipation has occurred, nor been increased if already present. Nay, pain and heat of the head, and giddiness existed already in some cases, and ceased during its employment."

This remedy has often been employed in similar complaints, in this city, and so far as we can ascertain, with very limited success. It is difficult to explain results so diametrically opposed, unless we admit that our remedy is not as powerful as that employed in England, or that our physicians prescribe it in too small quantities; but although these reasons may sometimes be found correct, we are convinced they cannot be regarded so in all instances.

SURGERY.

37. *Amputation at the Knee Joint.*—Professor Smith of Yale College, recommends this operation in those cases, in which the superior part of the articulation is sound, and any circumstances prevent amputation below the knee. He makes two semicircular flaps, anteriorly and posteriorly: the first extending downwards to the lower part of the tubercle of the tibia, and formed of the patella and its ligament, with the integuments, synovial membrane, &c.; the second, of the same extent, and formed of the soft parts posteriorly. The anterior flap is to be first raised; the lateral ligaments are then to be divided, and finally, by a few strokes of the knife, the crucial ligaments and the posterior soft parts. When the flaps are approximated, "*the synovial membrane immediately assumes the adhesive inflammation, and union is speedily effected.*" "The stump will be more useful, as the lower part is formed by the patella, which becomes anchylosed to the femur." In April 1824, Dr. S. operated in this way on a Miss R. D. of Brunswick, Maine: "the patient recovered without the occurrence of any thing unpleasant."—*Amer. Med. Review, Dec.* 1825.

38. *Ligature on the Carotid artery.*—A case is stated by Dr. Boileau, of a man, thirty-six years of age, who was subject, from infancy, to pains in the head. At the age of twenty years, he had an eruption (dartre) on the chin, which remained for eight years; its disappearance was followed by increase of the cephalalgia, and by epileptic convulsions, partially caused, or increased, by intemperate habits. On the 19th of July 1822, he received an injury of his head from a fall, which was followed by more frequent epileptic paroxysms, and by mania. On the 22nd, he attempted to destroy his life by plunging a knife into the upper part of the neck, thus wounding the *superior thyroid artery.* The hæmorrhage was excessive, ceasing only with complete syncope. Dr. Boileau found him in this state; no pulse or action of the heart evident,—respiration very indistinct. He secured immediately, the common carotid on the right side. In a quarter of an hour afterwards, respiration was more evident, and gradually reaction succeeded; his mind, however, remaining calm. No unpleasant symptom occurred, and "during the space of three months, that I attended this patient, I noticed a gradual diminution of the symptoms of cerebral irritation, and towards the end of the treatment, *there existed no indication* by which its existence could be recognized. I thought the cure might be radical, if the patient would avoid all sources of cerebral excitement, direct or sympathetic."

This result he attributes to three causes. 1st. The profuse hæmorrhage following the wound. 2nd. The resistance afforded to the passage of blood to the head, by the obstruction of one carotid artery; and 3d. The continuance of a severe abstemious regimen.—*Journal Univ. des Scien. medicales, Aout.* 1825.

39. *Concussio Cerebri.*—Mr. H. R. Oswald, of the Isle of Man, relates an interesting case of an individual aged forty, who, on Friday Aug. 5th, fell backward from a poney, on the right and posterior part of the head. He was taken up insensible, and soon afterwards was bled, with no apparent effect. Mr. O, saw him on Saturday, Aug. 6th. found him insensible, incapable of deglutition, and sometimes manifesting an aversion to the attempt: he could not speak, and did not hear a loud voice; yet the pupils contracted on exposure to a lighted candle, which appeared to give him pain. Aug. 7th, morning; still incapable of swallowing; liquids introduced into his mouth, run out without irritating the fauces. In the evening, symptoms worse, and recovery despaired of. Mr O. now injected by means of a flexible tube, &c., a "pabulous" fluid into his stomach, to obviate some of the bad effects proceeding from the loss of the power of deglutition,—as the want of nourishment, and the torpor of the superior portions of the alimentary canal from the absence of all stimuli of a diluting, pabulous, or medicated kind. A pint of fluid, consisting of equal parts of skim-milk and common tea, was thrown into the stomach, after much resistance on the part of the patient, who was roused from his stupor by the operation. He, however, immediately relapsed into his former state. On the next day, Aug. 8th, the patient had *regained*, in some degree the powers of speech,

of hearing, and of swallowing. Symptoms of re-action *now* appeared, such as pain in the head, with an increase of temperature, pulse harder, &c. V. S. leeches, blisters, &c. were directed. This plan was continued to advantage, so that by the 11th of August, the patient was quite convalescent.

Mr. **Oswald** observes, in conclusion, that he considers it a case of unequivocal concussion of the brain, from a severe blow, from which the patient did not recover immediately, as in slight concussions, but remained sixty-five hours insensible; "and would probably have never recovered had not injection into the stomach been practised, so as to rouse re-action in that organ, and consequently in the whole system."—*London Med. and Phys. Jour. for Novem.* 1825.

40. *Chemosis.*—M. **Desgranges**, of Lyons, has detailed in the Jour. Generale de Med. Aout. 1825, a case of ophthalmia, in which the conjunctiva was raised and protruded, as in common cases of chemosis, by a *serous effusion* under this tissue, giving it a greyish colour. He terms it a "serous chemosis," and would distinguish it from *œdema* of the conjunctiva, phlyctenæ, isolated vesicles, &c.

The word *chemosis* has been very inaccurately employed by most writers on ophthalmia; many indicating thereby, a mere protrusion of the conjunctiva, from whatever cause; hence an *ecchymosis* of this membrane is often termed a chemosis. But the term should be restricted to that swelling which is the result of an inflammatory condition of the tissue; and hence we cannot award the meed of novelty, to the above observation of M. **Desgranges**. For it is certainly not new to us, that chemosis is caused by the effusion of a *serous* fluid, as well as of a lymphatic, a bloody, or even of a muco-purulent liquid. All these are the consequences of the inflammatory irritation, according to its violence, the cause which produced it, &c. Hence we observe also a "fungous chemosis," or a permanent thickening of the conjunctiva from the effusion of lymph: only to be remedied by excision: the cornea, in all these cases, being generally sound.

41. *Fracture of the Os Femoris with a Wound of the Popliteal Artery.*—Dr. **Samuel C. Gwinner** relates the case of a man, æt. 35 years, who received a severe blow on the left thigh from the falling of a hogshead; causing a fracture of the bone at its lower part. In an hour's time, the thigh was found enormously swelled and tense; the pain was excessive, which was referred to the foot and ancle; the foot and lower part of the leg were unusually cold and void of all sensibility to the touch. On the 8th day, coldness and want of sensibility remained, the pain and swelling were diminished; but the extremities of the toes were of a purplish colour, and vesications were forming on the outside of the limb, indicating gangrene. On the 14th, the skin covering the toes was shrivelled and dry; the gangrene extending, the health good. On the 17th day, the gangrene had reached the knee; the pain and swelling had greatly abated; and the constitution was suffering from irritative fever, and considerable debility was

present; amputation was performed. On the 21st all the symptoms promised a recovery.

Dissection of the limb. The Popliteal artery was wounded by the extremity of one of the fragments, immediately after it perforates the triceps adductor. "The orifice was small, and had communicated with a cavity about the size of a goose-egg, but now closed by a coagulum of blood which had formed in the artery more than an inch in length, opposite the wound, by this means intercepting completely the circulation through the sac and limb below, accounting most satisfactorily for the cause of the gangrene." The slowness of the mortification induces the belief, that there was a partial circulation through the leg. The blood in the sac and in the venæ comites of the femoral artery was almost as black as ink; and *completely dissolved.* The artery was thickened and *contracted*, the veins greatly enlarged and distended.—*Amer. Med. Review, Dec.* 1825.

42. *Gastrotomy.*—Dr. Barletta was called upon to extirpate a tumour from the abdomen, about the size of a hen's egg, and situated on the linea alba, below the umbilicus. While performing the operation, he found it was necessary to *open the cavity of the abdomen*, as the tumour proved to be formed by the peritoneum. This he did not hesitate to do; the patient's life was in danger from the subsequent symptoms, but she finally recovered. A hernial disposition at the cicatrix rendered a truss necessary.—*Jour. Univ. des Sc. Med. Sept.* 1825.

43. *On the occasional Obliteration of the Intestinal Canal.*—Dr. Bishopp, has published in the Nov. No. of the London Med. Repository, several cases and observations to prove that the mucous membrane of the intestines occasionally *coheres* so as to obliterate the canal. He adduces a case of strangulated Intestinal Hernia which occurred to himself in 1817. The patient died on the 5th day after strangulation, and twenty hours after the operation had been performed. There was no appearance of gangrene; marks of inflammation existed over the whole cavity of the abdomen, but especially in that portion of the ileum which had been strangulated. This portion was carefully examined; "it measured an inch and a half, and was so completely impervious throughout its whole extent, as not to admit either the smallest probe or a drop of water, in consequence of a *very firm cohesion of the villous coat*, most clearly produced by the adhesive inflammation giving the whole a very notable degree of *firmness and thickening*; so that nothing like mobility between the coats could be perceived when the sides of the gut were rubbed together between the thumb and finger." His second case is quoted from the 4th Vol. of the Mémoires de l'Academie de Chirurgie, and was communicated by M. Ritsh. This was also a case, in which an operation afforded no relief to a strangulated intestine, the patient died in 12 hours, and on examination "the intestine ileum was found excessively contracted at the two points, in which it had been strangulated at the ring, as if it had been firmly tied with a pack-thread. There was a mutual cohesion of the internal parieties of the intestine, in such a

manner, that the cavity above this bridle had no communication with the remainder of the canal; the passage was completely obstructed."

A similar instance is also adduced from **Graefe** and **Walther's** Journal, in which an inch and a half of the small intestines "was constricted and nearly altogether obliterated." Dr. **Bishopp** quotes the authority of Mr. **Geoghegan**,[*] that the operation for hernia frequently fails in consequence of an agglutination of the villous coat of the gut; also an instance of strangulation, from Professor **Monro**, in which, a coagulum of fibrine completely obstructed the canal. From these facts, he would recommend that in operating for strangulated hernia, if the intestine be found thickened it should not be returned, until the bowels became pervious; should this not happen, but the symptoms of strangulation continue, the bowel should be laid open, and treated as when found gangrenous.

To these practical inferences we perceive no objection—but the cases brought forward are by no means sufficient to substantiate the hint thrown out, that mucous membranes *often cohere* by the inflammatory process;—or that it is an event which will occur in many instances. We have not room for a discussion on this important point, but we would recall to our readers the manner in which strictures of the urethra, of the rectum, of the œsophagus, &c. are formed;—not by the effusion and subsequent organization of lymph from the secreting surface, but by the deposition of fibrine externally, in the *substance* of the mucous tissue, in the cellular membrane, and other parts forming the parieties of the canal, by which the whole is indurated and thickened. This occurred in Dr. **Bishopp's** case, as well as in all those which he has quoted. Let it be also remembered, that even when the inflammatory irritation of the mucous surface is very great, and large quantities of lymph are secreted on its exposed surface—the instances are exceedingly rare where this lymph has been found organized. The membranes formed in the inflammatory affections of the trachea, bronchiæ, intestines, &c. have, perhaps, never been found permeated by blood-vessels, nerves, &c.[†] These facts, to our mind, are sufficient to establish the general principle, that mucous membranes, so long as their integrity is preserved, do not unite by the adhesive inflammation. To it there perhaps may be some exceptions; the adhesion *may* have occurred in some of the cases which Dr. B. after much research, has been able to collect. **Copeland** and **Calvert** affirm also, that strictures of the rectum are sometimes caused by this direct adhesion; but proof is yet wanting, that in these and similar instances ulceration did not precede the secretion of the lymph.

44. *Fistulous Opening between the Vagina and Urethra, successfully treated.*—Mr. **Hobart**, of Cork, Ireland, in the London Medical Journal for December, reports, that on the 17th of July, 1825, he was consulted by a healthy female, æt. 26 years, who, about ten months previously, had been deliver-

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[*] Ed. Med. and Surg. Journ. 1824.

[†] Vide also the Exper. and Observ. of Smith, Travers, Thomson and others, on wounds o' the intestines.

ed, after a tedious labour of five days, by means of the *perforator* and *crotchet*. From this period she had been continually subjected to an incontinence of urine, the whole of this secretion passing constantly from the vagina, causing much distress, besides excoriation of the nates, thighs, &c. **Dessault's** plan of introducing a pessary into the vagina, and keeping a catheter in the urethra, had been ineffectually tried for two months. The application of the potential, and of the actual cautery to the edges of the opening, had no better result. Mr. H. obtained a satisfactory view of the fistulous opening, on dilating the vagina by means of Mr. **Weiss'** speculum. This opening was nearly oval, with its long diameter in the direction of the vagina; its edges smooth and callous; its size sufficiently large to admit the point of the finger; and its situation about two and a half inches from the os externum.

To effect a cure, the argentum nitratum was freely applied to the callous edges, so as to reduce them to a granulating state—after which the parts were retained in contact by means of two ligatures. A catheter was passed into the bladder, through the urethra, and properly secured in its place. At the end of fourteen days the ligatures were withdrawn, and three days afterwards, the catheter, when the opening into the vagina was found closed,—the whole of the urine flowing now from the urethra. For a short time the patient suffered from incontinence of urine, but by the end of August, she was entirely relieved from all inconvenience.

45. *Calculus in the Urethra.*—In the Archives Génerales for September, M. **Bouler** details the following case:—A boy, five years of age, had suffered for two years slight attacks of hœmaturia, recurring frequently, but without pain, or any particular uneasiness, even while urinating. In the night of the 7th of May, 1825, he was suddenly attacked with a retention of urine. On the morning of the next day, Dr. B. found him in extreme suffering, making forcible, but useless efforts to urinate; the belly swollen, face flushed, and a good deal of fever. So much pain was caused by attempting to introduce the catheter, that, at the request of his parents, it was given up, and the warm bath, fomentations, and enemata were directed. At 8 P. M. the boy was insensible, and affected with frequent convulsions, while the abdomen was enormously swelled. The introduction of the catheter, which could now be attempted, was prevented by a foreign body in the urethra, immediately anterior to the scrotum. To remove this extraneous substance, which proved to be a calculus, an incision, five lines in length, was made through the skin, and parallel to the urethra—the skin being drawn forwards to prevent this first incision remaining parallel with the second, by which the urethra was opened. A calculus was easily extracted, and a quantity of urine, at first of a red colour, immediately escaped. The child recovered from its insensibility during the operation. The wound was simply dressed; no catheter was introduced. A little urine continued to pass through the opening until the third day, when it was found entirely closed, and all danger had disappeared.

46. *High operation for the Stone* successfully performed at Sheerness, by A. Copland Hutchison, Esq.—"The patient being placed on a mattress upon a table of ordinary height, with a pillow under his head; the pelvis raised considerably higher than his shoulders, with the view of removing the peritoneum as far from the parts to be cut as possible; while his feet rested upon chairs; standing on the right side of the patient, I made an incision, nearly four inches in length, with a scalpel, in the line of the linea alba through the integuments downwards over the front of the pubes; which latter step I found of great advantage, both during the operation and in the subsequent treatment of the case. The incision was carried on down towards the bladder, between the pyramidales muscles, and through the linea alba; the latter being first punctured, and after cut *transversely upon the symphysis pubis,* dividing some of the fibres of the pyramidal muscles on each side as we proceeded, so as to give a more free passage for the extraction of the stone. I then, with a director, detached this tense membrane (the linea alba) from its subjacent adhesions, and divided it upwards with a probe-pointed bistoury, introduced into the groove of the director, until I could readily insert the fore-finger of my left hand, which is, on all occasions, the best director; and which was most conveniently done by standing between the legs of the patient. When about two inches and a half of the linea alba were thus divided, I thought we should have had sufficient space for cutting into the bladder, and extracting the stone; but, as the wound appeared deep and narrow, and there was a large calculus to extract, I cautiously extended the incision half an inch more, in the manner already described.

The bladder, very much contracted, was now clearly seen covered by fat, and was raised through the fat, upwards and forwards, to the external wound of the integuments, upon the point of a silver staff, with a groove in its concave part, extending from close to its point downwards about two inches, and which I preferred to the *sond* used by the French surgeons, that instrument appearing to me both unnecessary and unscientific. The handle of the silver staff being held in a depressed position by my friend Mr. Brown, the anterior part of the fundus of the bladder was pierced from without, by a straight sharp-pointed bistoury, passing its point into the groove of the staff, and carrying the incision downwards and forwards to the pubes, until there was room for the fore-finger, which was introduced for the purpose of ascertaining the size of the calculus, that the opening in the bladder might be enlarged accordingly. Having satisfied myself on this head, I hooked up the fundus of the bladder with my finger, and enlarged the incision towards its cervix, sufficiently to admit of the free extraction of the stone. Some little difficulty here arose in disengaging the stone from its situation, notwithstanding the great assistance obtained by the *introduction of the fore-finger of my right hand into the rectum,* while the fore-finger of my left was in the bladder, to cant or turn the stone, so as to extract it by its smaller axis: and, indeed, this was not effected until the single blade of a pair of small stone-forceps was introduced. The stone being thus turned, it was easily removed with the finger and thumb. In point of fact, so firmly did the bladder grasp the calculus, that the idea was conveyed to our mind of its actual adhesion to the coats of that viscus.

One small cuticular artery was divided at the first incision, and secured at the time, to prevent the future steps of the operation being obscured by the bleeding, and the subsequent issue of blood into the cavity of the pelvis.

Two slips of linen, dipped in oil, were introduced through the external wound on each side of, but not into, the bladder. A gum-elastic catheter was passed into the bladder, so as just to enter its cavity, and no further, and was secured in this situation by tapes attached to the instrument, and to an elastic band, or retainer; which in this case was made of flannel, lined with calico. The sides of the wound were brought together by slips of sticking-plaster, and the parts supported by a flannel roller, passed three or four times round the pelvis and the lower part of the abdomen. The patient, by means of pillows, was placed on an inclined plane; a vessel was secured to the end of the catheter to receive the urine; and he had an anodyne draught administered to him." The patient did well, recovering very speedily. Letter to Sir E. HOME, Bart.—*Journal of Science, Oct.* 1825.

MIDWIFERY.

47. *On the effects and use of Ergot.*—Although the ergot has long been a subject of investigation among the accoucheurs of this country and Europe, we do not discover that any satisfactory conclusion has been arrived at, respecting its real virtues in accelerating the action of the uterus; or the danger to the mother or child, attending its exhibition. Our readers, who have examined some of the later numbers of the New York Medical Repository, must have noticed the sentiments of a very reputable accoucheur and physician of Baltimore, Dr. CHATARD, respecting the danger attending its use during labour;—sentiments stoutly opposed by Dr. IVES of New York, and contradicted by the result of the experience of many of our most intelligent practitioners. Indeed almost every writer on the subject entertains a different opinion. M. DESGRANGES found it very useful and manifesting a decided action on the uterus. Mr. CLIET, of Lyons, and Mrs. LACHAPELLE, found it a useless article. More recently Dr. GEORGE HOLCOMBE, of New Jersey, in a letter addressed to Dr. DEWEES, and published in the February number of the Philadelphia Medical and Physical Journal, remarks: "The scruple dose, as a general prescription for aiding the expulsive stage of labour, I am convinced, from considerable experience, is exceptionable and dangerous." He is decidedly of opinion that more children have died from the injudicious use of the ergot, since its in-

troduction in practice, than have been sacrificed by the unwarrantable use of the crotchet for a century past. " For some time I used the scruple doses, but soon abandoned this practice in consequence of several fatal demonstrations of its impropriety. Since then I have administered it in very small doses—say from two to three grains, which I repeat as often as may be necessary; and in this manner, I am *generally* able to effect my object; and *always* without injury to the mother or child. In fact, I have never known a child's perishing from ergot administered in this cautious manner. I prescribe it now, unhesitatingly, in first labours, and even in cases of contracted pelvis; and such is the extraordinary energy imparted to the uterus, by the slow but persevering mode of exhibition, which I have adopted, that I have very rarely found it necessary, for several years past, to resort to the use of the forceps."

48. *A new variety of Extra Uterine Pregnancy*, is described by **Gilbert Breschet**, M. D. of Paris, in the 13th volume of the London Medico-Chirurgical Transactions. This variety, is termed by Dr. B. "*Graviditas in Uteri Substantia:*" The fœtus being enclosed in the parenchyma of the uterus itself—and surrounded by a cyst, separating it from the substance of this organ, as is observed, whenever foreign bodies are introduced into organic tissues. No communication existed between the cavities of the abdomen or uterus, and that containing the fœtus.

One case, which is given in detail, and the first that has been published in France or England, occurred to Dr. B. himself. A second one was seen by Dr. **Albers** of Bremen. Besides these, says our reporter, there are only two cases on record. The first may be found in vol. 1st. of the Memoirs of the Josephine Academy of Vienna—and is related by Professor G. **Schmith**; and the second has been described by Mr. **Hedrick**; and Professor **Carus** of Dresden has given a drawing of the preparation.

In all these cases, a rupture took place, sooner or later, the fœtus was thrown into the abdomen, and death speedily ensued. In each case, the membrana decidua was distinctly formed in the uterus, even where the tubes were obliterated, manifesting, that it does not belong to the embryo, properly so called. Dr. B. offers several explanations of this variety of extra-uterine pregnancy, for which we must refer our readers to the work itself.—*Archiv. de Horn. Sept. & Oct.*—1817.

49. *A case of double Uterus.*—This was observed in the body of a female, aged thirty years, who died from peritoneal inflammation, soon after the birth of her fifth child. Her first accouchment was laborious, rendering instruments necessary; the succeeding three were natural. In December, 1824, she was again in labour, but the pains produced no effects on the os uteri; the uterus itself appeared to have a right obliquity, occupying chiefly the right side of the abdomen. The fœtus was eventually delivered by the forceps, through a rupture, which spontaneously occurred near the pubis. She died on the third day after delivery.

The uterus was found to consist of two lobes; a left and right, the latter being more anterior, having separate cavities and communicating laterally with a common neck. The right lobe had evidently contained the last fœtus, having a transverse rupture, about three and a half inches in length, communicating with the vagina. It was very obliquely situated. The left lobe was much less oblique, and in the present condition smaller. The vagina was single. To each lobe was attached one broad ligament, with an ovary, fallopian tube, &c.

From appearances, and from the situation of the two lobes, it seemed probable, that the first children had been contained in the left lobe, whose situation, being less oblique, allowed of a natural delivery; but that the last infant was formed in the right lobe, whose obliquity prevented its passage, except by a preternatural orifice. The bladder also was unexpectedly found to be ruptured.—*Communicated to the Society of Med. at Angers, by Drs.* Jouvet *and* Garnier.—*Archives Generales.*

50. *Uterine Hæmorrhage.*—Mr. Waller, of Aldersgate street,[*] has performed the operation of transfusion, in a case of extreme exhaustion from uterine hæmorrhage. Four ounces of blood were transfused. The syringe held half this quantity, and two injections were made. The blood was drawn directly from a vein of the husband, and immediately introduced into one of those of the patient. The operation is stated to have been followed by entire restoration from a state of extreme exhaustion. The precaution was used, and is recommended, to introduce a blunt needle, a little below the orifice, in order to prevent the loss of blood. We cannot conceive that four ounces could save the life of a person, dying from the loss of several quarts.

Mr. E. Doubleday was also called to a female, so exhausted by bleeding from the uterus, before the placenta was extracted, that the pulse could not be felt; the countenance was exsanguineous; sight indistinct; breathing hurried, and accompanied with sighing; and the body covered with a cold clammy perspiration. No real advantage being procured by the free exhibition of brandy, ammonia, and laudanum, the operation of *transfusion* was undertaken by Dr. Blundell. The median vein in the right arm was exposed, but the patient made so much resistance, that it could not be persevered in. At half past two o'clock P. M., about ten hours after the delivery of the child, and six hours after the hæmorrhage had stopped, and after twenty ounces of brandy, one hundred and sixty drops of laudanum, and a considerable quantity of ammonia had been given; Mr. D. received an urgent message from the attending physician, Mr. Franks, that the patient was "*sinking very fast.*" The operation was immediately performed with all the requisite precautions. Two ounces of fresh blood were injected in a direction towards the heart: the *pulse rose* as the syringe was emptied. On the injection of the second quantity, the pulse *became broader*, and the appearance of the lips and countenance was much improved: when the third syringeful was thrown in, she was so much recovered as to exclaim, "I am as strong as a bull!" The operation was continued with evident advantage until fourteen ounces of blood had been injected, and the patient complained of a slight pain over the left eye. "The pulse sometime previous to the operation, when it could be numbered, was 140, but was now reduced to 104. A quarter of an hour after the operation, it was 98; in half an hour, 90. The pulse for the most part was strong, soft, and full, but somewhat irregular, and continued so for upwards of two hours. At about the expiration of an hour, she sat up and assisted the nurse in undressing and in making herself more comfortable, as if nothing had occurred beyond what is observed in ordinary cases."

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[*] Vide Lond. Med. Journal, October, 1825.

Three hours after the operation, some fever was present, rendering a purgative enema necessary, and by the evening of the succeeding day, her breasts were distended by a free secretion of milk. She rapidly recovered. *Lond. Med. and Phys. Jour. for Nov.* 1825.

The London Med. Repository for January last, states, that Doctors **Uwins** and **Blundell**, and Mr. **Wright**, surgeon, have operated in a third case, in which also a puerperal female was exhausted from flooding. The details are not given, but the editors add, that they "are not of a nature "to satisfy us, that the operation was either so necessary, or so beneficial, "as those engaged in the performance of it, seem to have thought."

51. *Extract from a note addressed to Professor* James, *of the University of Pennsylvania, dated November 15th,* 1825.

"Sometime in the year 1815, a negro woman, belonging to Mr. **Allen**, of Barnwell, South Carolina, was delivered by a natural unassisted labour of three children: two of them were *white* males, the other a perfectly *black* female. These three children were born in such quick succession, that the only attendant present, (a female,) became frightened and fled, leaving the children on the floor of the apartment. No untoward symptom succeeded, and the mother was perfectly restored in a few weeks.

The two boys are now alive, and full grown for their age. In consequence, however, of the mother's neglect, who appeared particularly attached to the sons, the girl did not survive longer than eighteen months.

Having, in company with other gentlemen, visited the mother and children, expressly to ascertain the truth of these facts, I have no hesitation in stating the above mentioned circumstances as correct: and as the case appears to be interesting in several points of view, both physiological and obstetrical, I have taken the liberty of intruding it upon your notice; hoping my intention will excuse any breach of ceremony which I may have made in offering it. Yours, &c.

LAURENCE J. TROTTI."

52. *A Tumour in the anterior Mediastinum, containing Bone and Teeth,* is described by Dr. James Alexander Gordon, in volume 13th of the Medico-Chirurgical Transactions of London.—M. C. ætat. 21, a stout young woman,

was admitted with symptoms of pneumonia, into the Islington Dispensary, on the 17th of June, 1822. On the 19th of August, a pulsating tumour manifested itself below the sternal extremity of the left clavicle, which rapidly increased. It afterwards remained stationary until the spring of 1823, when it gradually extended over the trachea to the right side, threatening suffocation. In the middle of June, it began to point, and on the 25th it burst, discharging only a *serous* fluid. The tumour now gradually disappeared, and by the 12th of September, no trace of it was discoverable and the patient was able to return to her work.

On the 17th of October she was re-admitted, with symptoms of dyspnœa and general fever, and on the 20th she died.

On dissection, a tumour was found in the anterior mediastinum, closely connected by thickened cellular membrane with the arteria innominata. The parieties of the tumour, (which adhered to the sternum) had anteriorly "the close compactness of tendinous expansion," while its posterior and lateral portions were more loose and flaccid. The contents were, serous fluid, sebaceous matter, mixed with hair, and at the bottom, a bony substance. "On a more careful examination, bone was detected, very nearly "resembling the upper maxillary, a portion of alveolar process, which "might seem to belong to the upper or lower maxillary, and seven teeth, "two cuspidati, two incisores, and three molares."

Accounts of cases, similar to this, may be seen in the Philosophical Transactions, and in a publication of Mr. Highmore in 1815. "I should consider the tumour as having co-existence with the subject from which it was taken, and was carried without inconvenience, till inflammation in its neighbourhood, excited that fluid secretion, on which its enlargement depended."

CHEMISTRY AND PHARMACY.

53. *Alleged Variation in the Composition of the Atmosphere.*—Mr. Dalton states that he has found the oxygen in the atmosphere to vary from 20.7 per cent. to 21.15 per cent. In its general state, Mr. Dalton found from 20.7 to 20.8 per cent.—*Ann. Phil. N. S.* x. 304.

No conclusion can be drawn from differences so slight as here related, unless the experiments have been made with scrupulous attention to accuracy. Until this is done, the strong probability remains that the composition of atmospheric air corresponds with two atoms of azote and one atom of oxygen, which gives 20 per cent. as the proportional amount of the oxygen by volume. We are the more inclined to this opinion, as the progress of experimental inquiry is constantly reducing the quantity of oxygen. By numerous experiments, made with the very accurate eudiometers invented by Dr. Hare, the proportion of oxygen by volume very little exceeds 20 per cent.

54. *Discovery of Lithia in the Mineral Waters of Bohemia.*—Berzelius, in a letter to Dulong, states that he has discovered the rare alkali lithia, as a constant and essential constituent in these waters. He also considers it as very probable that sea water contains this alkali.

55. *Thorina not a distinct Earth.*—Berzelius has ascertained that the substance announced by him, about ten years ago, as a new earth, under the name of thorina, is really a subphosphate of yttria.—*Journ. of the Royal Inst. Jan.* 1826.

We are glad to receive this information, as it clears up a difficulty, under which we have laboured for some time past, that thorina, though a discovery of Berzelius, should not be mentioned by this chemist in his Essai sur la Théorie des Proportions Chimiques, published in 1819.

56. *Simultaneous action of oxygen and alkalies on organic substances.*—Mr. Chevreul has ascertained that several substances are acted upon by the combined power of oxygen and alkali; though not affected by either of these agents separately. Some of the substances in this predicament are *hematin, colouring principle* of Brazil wood, *cochineal, flax, gallic acid, ox gall, colouring matter of blood,* and *albumen.*

Considering these facts, Mr. Chevreul is led to make the following queries:

Have not the alkaline liquids of the animal system a different relation to oxygen from the acid liquids?

May not the alkaline matter contained in the blood have some influence in the function of respiration?

Is the alkalinity of the fluids, destined during life to receive the impression of the air, essential to the chemical changes which occur in respiration; or is it an independent condition, having no agency in those changes? Mém. du Muséum, xii. 367, as quoted in the Journal of the Royal Institution, Jan. 1826.

57. *Peculiar blue matter, obtained from certain urines.*—Mr. Braconnot has lately subjected to chemical examination a specimen of morbid urine, of a deep blue colour, voided by a girl who had vomited a matter of a similar colour. The colour depended on a blue matter held in suspension, which was readily separated by the filter. When examined, it was found to be pulverulent, of extreme tenuity, insipid, inodorous, and of a tint deeper than Prussian blue. Mr. Braconnot, considering the blue matter as a peculiar substance, and, from its aptitude to combine with acids, analogous to the organic salifiable bases, proposes to call it *Cyanurin.*

Upon heating the urine, from which the blue matter was separated, another principle in the form of a very black sediment, is deposited; for which Mr. Braconnot proposes the name of *melanurin.* Mr. B. thinks it probable, that it is the presence of this substance which gives rise to the black colour of certain urines.—*Ann. de Chimie,* xxix. 252, *July,* 1825.

58. *Method of detecting minute portions of Corrosive Sublimate.*—Mr. Nicole, apothecary at Dieppe, has lately put in practice Mr. James Smith-

son's method of detecting this poison. It depends upon the decomposing galvanic action excited by the contact of gold and tin. Mr. Nicols proceeded thus: a piece of rolled tin-foil was wound round a gold ring. A portion of the poisoned substance (an omelet in the case reported by Mr. Nicols) is then put into a watch glass, mixed with a little distilled water, and the ring, armed with the tin-foil, brought in contact with both. Upon the addition of a drop of muriatic acid, the little pile is brought into action, and determines the decomposition of the mercurial salt, the mercury being revived upon the gold, which it whitens.—*Jour. de Pharmacie, Sept.* 1825.

59. *Method of detecting adulterations of Balsam Copaiva by Castor Oil.*—Castor oil is frequently used to adulterate the balsam copaiva. The fraud may be detected, by subjecting the suspected sample to a prolonged ebullition in water, or by the addition of caustic soda. By the former test, if the article be impure, a soft substance of various degrees of consistence is obtained; if pure, the residuum is a hard and brittle resin, amounting to half the weight of the balsam. By the test of caustic soda, the pure balsam is converted into a whitish liquid, which, in half an hour, separates into two distinct layers, the lower one, somewhat thick, and the upper, entirely composed of the balsam. If the article be adulterated, the alkali converts it into a whitish saponaceous mass, which at the end of twenty-four hours becomes hard.—*Jour. de Pharmacie, Sept.* 1825.

60. *Necessity of Water in the preparation of Emplastrum Plumbi or Lead Plaster.*—It is usually stated by pharmaceutical writers, that the only use of water in the preparation of this plaster, is to prevent the temperature from rising too high. That this is an erroneous supposition, is proved by the fact, that litharge and oil cannot be made to unite, though stirred together for several hours, the heat being regulated at 220° by means of steam. If, however, a small quantity of boiling water be added to the heated mixture, the oil and oxide immediately saponify.

The author of these observations, supposing it probable that the oxide of lead might be in the state of hydrate, proved this to be the fact, by repeating the process with olive oil, and hydrated oxide of lead, precipitated from acetate of lead by caustic potassa, exposing the mixture to the temperature of 212°. In half an hour, without the addition of any water, the substances united into a perfect plaster.—*Jour. Roy. Inst. Jan.* 1826.

61. *Medicinal Principle of Garden Lettuce, or Lactuarium.*—Mr. François purposes to obtain the narcotic principle of this plant by making incisions into its stem at the time of flowering. When thus obtained, he proposes for it the name of *thridace.* Mr. Roman, in commenting on Mr. François' method, objects to it, on account of the small product, which it enables the operator to obtain.

Mr. Roman prepares the principle in the following manner:—He takes thirty pounds of lettuce, and deprives it of the leaves and summits. The stems, after being cut into small pieces, are bruised in a marble mortar, and afterwards macerated for six hours in about twelve and a half pints of water.

The whole is then strained. The strained liquor, after having been allowed to rest, is boiled for a few minutes, in order to separate a green fecula. It is then filtered and evaporated to a proper consistence. From the quantity of lettuce above mentioned, Mr. ROMAN obtained six ounces of a reddish-brown extract, of a resinous appearance, attractive of moisture, and possessing a taste similar to that of the extract of opium. Its properties are besides, the same as those of the thridace of Mr. FRANÇOIS, producing the same effects in the same doses.—*Revue Medicale, Aug.* 1825.

Mr. DUBLANC, Jun. has ascertained that this substance does not owe its narcotic power to the presence of morphia.—*Journ. de Phar. Oct.* 1825.

MORTALITY

IN SEVERAL OF THE PRINCIPAL CITIES OF THE UNITED STATES, FOR THE YEAR 1825.

The following bills of mortality have been taken from Poulson's American Daily Advertiser, (for which they were expressly arranged) with some alterations.

STATEMENT OF DEATHS IN THE CITY OF BOSTON,

For the year 1825,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Males.	Females.	Total.
January, . . .	51	48	99
February, . . .	53	66	119
March, ...	46	37	83
April, ...	60	51	111
May, ...	63	58	121
June, ...	53	48	101
July, ...	83	87	170
August, ...	74	78	152
September, . .	79	66	145
October, ...	73	50	123
November, . .	48	58	106
December, . . .	60	60	120
Totals, . . .	743	707	1450

AGES.	
Under 1 Year,	322
From 1 to 2	170
2 to 5	104
5 to 10	46
10 to 20	54
20 to 30	136
30 to 40	155
40 to 50	117
50 to 60	81
60 to 70	51
70 to 80	55
80 to 90	26
90 to 100	8
Unknown,	125
Total, ...	1450

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Fever, Typhus	54
—— Synocha	12
—— Intermittent	1
—— Yellow	1
Asthma	2
Pleuritis	6
Pneumonia	67
Phthisis Pulmonalis . . .	220
Influenza	7
Phrenitis	3
Diaphragmitis	1
Enteritis	15
Cystitis	1
Hepatitis	16
Icterus	9
Peritonitis Chronica . . .	3
Dysenteria	56
Carried over, ...	474

Brought over, ...	474
Colica Biliosa	4
Diarrhœa	4
Cholera Morbus	11
Dyspepsia	7
Obstipatio	3
Intemperance	23
Delirium Tremens . . .	7
Vesania	10
Ascites and Anasarca . . .	28
Hydrocephalus	38
Hydrothorax	3
Rheumatismus	6
Arthritis	1
Erysipelas	1
Scrofula	4
Lepra	1
Carried over, ...	625

Brought over,	625
Variola	1
Heart, diseases of	5
Carditis	2
Palpitatio	1
Old Age	38
Marasmus	2
Sphacelus	8
Abscessus	2
Tumour	1
White swelling	1
Carcinoma	7
Burns	5
Sciatica	1
Calculus	2
Syphilis	3
Hernia	2
Puerperal diseases	17
Still Born	89
Infantile diseases	44
Cholera Infantum	13
Dentitio	15
Aphtha	40
Pertussis	27
Carried over,	951

Brought over,	951
Rubeola	77
Scarlatina	1
Cynanche Maligna	6
—— Trachealis	24
—— Tonsillaris	3
Vermes	3
Accidental	11
Drowned	21
Murder	1
Suicide	4
Suffocation	1
Poison	1
Frozen	1
Cold water, drinking of	3
Heat	3
Sudden	35
Bursting blood vessels	2
Lethargus	1
Spasmi	48
Apoplexia	12
Paralysis	14
Unknown	227
Total,	1450

By order of the Mayor and Aldermen,
SAMUEL H. HEWES,
Superintendent of Burial Grounds.

STATEMENT OF DEATHS IN THE TOWN OF SALEM,

For the year 1825,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Males.	Females.	Total.
January,	10	12	22
February,	8	20	28
March,	9	8	17
April,	7	5	12
May,	7	7	14
June,	11	6	17
July,	17	17	34
August,	19	19	38
September,	10	19	29
October,	13	11	24
November,	14	10	24
December,	13	8	21
Totals,	138	142	280

AGES.	
Under 1 Year,	34
From 1 to 2	35
2 to 5	15
5 to 10	4
10 to 20	16
20 to 30	30
30 to 40	28
40 to 50	27
50 to 60	27
60 to 70	26
70 to 80	22
80 to 90	11
90 to 100	5
Total,	280

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Apoplexy	4
Aphthæ Infantum	3
Aphthæ	3
Abortion	2
—— After Dysentery	1
Accident	2
Atrophy	2
Burns	2
Cancer	1
Canker	1
Cholic, Bilious	1
Congestion in the Brain	1
Consumption	41
Convulsions	4
Chronic Hepatitis	1
—— Diarrhœa	2
Croup	5
Cholera Infantum	2
—— Morbus	1
—— Morbus and Enteritis	1
Compression of the Brain	1
Drowned	4
Dentition	1
Delirium Tremens	3
Dropsy	4
Dysentery	11
Diarrhœa	1
Dyspepsia	1
Disease of Rectum	1
—— Liver	1
Epilepsy	1
Enteritis	3
Fever	9
—— Typhus	1
Hydrorachitis	1
Carried over,	123
Brought over	123
Hydrocephalus	13
—— Acutus	5
—— Internus	2
Hydrothorax	3
Hydrops Uteri	1
Heat	1
Hæmorrhagia Atonica	1
Intemperance	6
Jaundice	1
Marasmus	9
Medullary Sarcoma	1
Measles	2
Old Age	22
Paralysis	4
Peripneumonia	5
—— Notha	11
Puerperal Insanity	1
Pneumonia	3
—— After Measles	1
—— Typhoides	1
Palsy	2
Pertussis	1
Phthisis Pulmonalis	20
Sudden Death	8
Suicide	3
St. Vitus' Dance	1
Secondary Syphilis	1
Scalded	2
Still Born	1
Scirrhous Pylorus	1
Tabes	1
Typhus Gravior	1
Uncertain	22
Total,	280

By order of the Board of Health,
JOHN C. VERY, Secretary.

STATEMENT OF DEATHS IN THE CITY AND COUNTY OF NEW-YORK,

For the Year 1825,

SPECIFYING THE SEXES, AGES AND DISEASES.

Deaths in each month.	Adults.	Children.	Total.
January, . .	196	121	317
February, . .	287	153	440
March, . . .	228	134	362
April, . . .	194	111	305
May, . . .	262	143	405
June, . . .	245	174	419
July, . . .	435	298	733
August, . . .	233	279	512
September, .	188	219	407
October, . .	206	160	366
November, .	219	157	376
December, . .	208	168	376
Totals, . . .	2901	2117	5018

Ages.	
Under 1 Year,	1109
From 1 to 2	386
2 to 5	300
5 to 10	137
10 to 20	181
20 to 30	653
30 to 40	758
40 to 50	641
50 to 60	357
60 to 70	226
70 to 80	161
80 to 90	88
90 to 100	14
100 to 110	7
Total, ...	5018

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Abscess	12
Aneurism	4
Apoplexy	147
Asphyxia	4
Asthma	12
Burned or Scalded . . .	30
Carbuncle	3
Cancer	13
Caries	1
Casualties	53
Catarrh	1
Childbed	30
Chicken Pox	1
Cholera Morbus	26
Cholic	6
Compression of the Brain .	3
Consumption	843
Convulsions	293
Contusion	4
Cramp in the Stomach . .	9
Diabetes	1
Diarrhœa	61
Drinking cold water . .	77
Dropsy	110
—— in the Chest . .	37
—— in the Head . . .	196
Drowned	56
Carried over, . .	2033

Brought over, . .	2033
Dysentery	138
Dyspepsia	5
Epilepsy	6
Erysipelas	16
Fever	120
—— Bilious . . .	10
—— Bilious Remittent . .	14
—— Inflammatory . . .	3
—— Intermittent	10
—— Puerperal	5
—— Putrid	1
—— Remittent	45
—— Scarlet	10
—— Typhus	227
Flux, Infantile	151
Fracture	7
Frozen	3
Gout	2
Gravel	3
Hæmorrhage	16
Hæmoptysis	9
Herpes	2
Hives, or Croup	133
Hysteria	1
Jaundice	15
Infanticide	3
Carried over, . .	2988

Brought over,	2988
Inflammation of the Bladder	3
—— Bowels	104
—— Brain	107
—— Chest	203
—— Liver	56
—— Stomach	13
Influenza	32
Insanity	26
Intemperance	84
Killed, or Murdered	3
Leprosy	1
Locked Jaw	14
Lumbar Abscess	2
Manslaughter	1
Marasmus	58
Measles	53
Mortification	21
Nervous Disease	9
Old Age	203
Palsy	62
Peripneumony	43
Pleurisy	42
Pneumonia Typhoides	7
Quinsy	8
Carried over,	4143
Brought over,	4143
Rheumatism	14
Rickets	1
Rupture	3
St. Anthony's Fire	4
Scirrhus of the Liver	1
Scrofula, or King's Evil	14
Scurvy	1
Small Pox	40
Sore Throat	33
Spasms	3
Spina Bifida	1
Sprue, or Aphthæ	18
Still Born	244
Sudden Death	49
Suicide	14
Syphilis	15
Tabes Mesenterica	143
Teething	61
Vomiting of Blood	1
Ulcers	6
Unknown	111
White Swelling	5
Whooping Cough	69
Worms	24
Total,	5018

Of the above mentioned Deaths, there were,

Men,	1721	
Boys,	1156	
Total Males,		2877
Women,	1180	
Girls,	961	
Total Females,		2141
Total,		5018

GEORGE CUMING, City Inspector.

STATEMENT OF DEATHS IN THE CITY AND LIBERTIES OF PHILADELPHIA,

For the Year 1825,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Adults.	Children.	Total.
January, . .	145	144	289
February, . .	147	86	233
March, . .	216	147	363
April, . . .	140	91	231
May, . . .	139	128	267
June, . . .	156	203	359
July, . . .	254	296	550
August, . . .	182	192	374
September, .	163	152	315
October, . .	126	123	249
November, .	160	124	284
December, . .	156	142	298
Totals, . . .	1984	1828	3812

Ages.	
Under 1 Year,	1109
From 1 to 2	250
2 to 5	232
5 to 10	128
10 to 15	58
15 to 20	82
20 to 30	432
30 to 40	479
40 to 50	373
50 to 60	263
60 to 70	171
70 to 80	122
80 to 90	85
90 to 100	24
100 to 110	4
Total, ...	3812

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Atrophy	29
Abscess	12
Apoplexy	61
Asthma	21
Angina Pectoris	5
Aneurism	2
Anthrax	1
Aphthæ	5
Burns	20
Bronchitis	14
Consumption	519
Convulsions	237
Casualties	19
Catarrh	71
Cholera	209
Cancer	12
Colic	7
Colica Pictonum	4
Caries	2
Cynanche Maligna	2
Childbed	4
Concussion	2
Contusion	4
Coup de Soleil	4
Decay	30
Carried over,	1296

Brought over,	1296
Debility	260
Diarrhœa	66
Dysentery	87
Drunkenness	31
Drinking cold water	25
Drowned	34
Dyspepsia	7
Disease of the Heart	5
Dropsy	90
—— in the Head	140
—— of the Breast	40
Epilepsy	13
Erysipelas	12
Eruptions	5
Extreme Heat	7
Fever	91
—— Bilious	62
—— Bilious Remittent	10
—— Bilious Intermittent	2
—— Malignant Bilious Remittent	1
—— Typhus	81
—— Inflammatory	7
—— Intermittent	13
Carried over,	2385

Brought over,	2385	*Brought over,*	3054
Fever Remittent	75	Measles	38
—— Nervous	10	Mania a Potu	64
—— Hectic	4	Murdered	1
—— Scarlet	9	Mortification	19
—— Puerperal	10	Obesity	1
Fracture	5	Old Age	60
Found Dead	15	Polypus	1
Gout	3	Poisoned	1
Gangrene	3	Perished for Want	1
Gun-shot Wound	1	Prolapsus	1
Hives	75	Palsy	42
Hooping Cough	40	Pleurisy	8
Hysteritis	1	Rheumatism	5
Hæmorrhage	34	Strangury	2
Influenza	3	Small Pox, (natural)	6
Insanity	24	Sore Throat	21
Inflammation of the Lungs	124	Scirrhus	7
—— Liver	36	Stone	3
—— Breast	13	Spasms	11
—— Brain	64	Scrofula	15
—— Bowels	56	Spina Bifida	4
—— Bladder	5	Sudden	72
—— Peritoneum	9	Still Born	273
—— Kidneys	3	Suicide	9
—— Knee Joint	1	Thrush	1
—— Stomach	16	Tumours	3
—— Spleen	2	Teething	15
—— Uterus	1	Ulcers	5
Jaundice	10	Worms	10
Locked Jaw	11	Wounds	1
Laudanum to excess	6	Unknown	58
Carried over,	3054	Total,	3812

Of the above mentioned Deaths, there were,

Males of 20 years and upwards	1119	
Ditto, under 20 years	932	
		2051
Females of 20 years and upwards	855	
Ditto, under 20 years	830	
		1685
Children principally under one year, whose sex is unknown		76
Total,		3812

Of the foregoing Deaths, 346 died in the Alms-House, and 495 were People of Colour.

Agreeably to the Returns received at the Health Office from *one hundred and twenty-nine* Practitioners of Midwifery, there were born, in the City and Liberties of Philadelphia, from the first of January, to the thirty-first of December, 1825, both days inclusive,

Male Children	3444
Female Ditto	3182
Making the Total Number of BIRTHS	6626
The whole Number of DEATHS was	3812
Difference between the *Births* and *Deaths*	2814

By order of the Board of Health,

JOSEPH PRYOR, *Clerk.*

STATEMENT OF DEATHS IN THE CITY OF BALTIMORE,

For the Year 1825,

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Males.	Females.	Total.	Ages.	
				Under 1 Year,	408
January,	83	59	142	From 1 to 2	114
February,	60	42	102	2 to 5	103
March,	64	54	118	5 to 10	54
April,	40	34	74	10 to 21	94
May,	56	72	128	21 to 30	170
June,	71	49	120	30 to 40	190
July,	122	67	189	40 to 50	139
August,	123	84	207	50 to 60	101
September,	57	57	114	60 to 70	80
October,	63	73	136	70 to 80	58
November,	54	61	115	80 to 90	23
December,	61	39	100	90 to 100	9
				100 to 110	2
Totals,	854	691	1545		
				Total,	1545

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Apoplexy,	17	*Brought over,*	563
Aphthæ,	1	Dropsy,	44
Asthma,	3	——in the Head,	24
Burns,	9	Drinking cold water,	5
Cancer,	3	Drowned,	26
Casualties,	12	Dysentery,	30
Childbed,	22	Dyspepsia,	1
Colic,	3	Enteritis,	1
——Cramp,	12	Fever, Bilious,	79
——Bilious,	2	—— Inflammatory,	5
Cholera Infantum,	93	—— Intermittent,	1
Cholera Morbus,	7	—— Scarlet,	3
Consumption,	295	—— Typhus,	50
Convulsions,	47	From Lightning,	1
Croup, or Hives,	37	Gout in the Stomach,	1
Diarrhœa,	2	Gravel,	1
Carried over,	563	*Carried over,*	837

Brought over,	837
Hæmorrhage,	3
Inflammation,	3
—— Brain,	10
—— Liver,	6
—— Lungs,	2
—— Stomach,	2
—— Throat,	1
Infanticide,	1
Intemperance,	21
Jaundice,	2
Liver Complaint,	25
Locked Jaw,	3
Mania,	3
Manslaughter,	2
Marasmus,	35
Measles,	9
Mortification,	6
Murdered,	1
Old Age,	69
Organic disease of the Heart,	2
Palsy,	11
Phrenitis,	1
Piles,	1
Carried over,	1056

Brought over,	1056
Pleurisy,	25
—— Bilious,	2
—— Typhoid,	1
Pneumonia,	16
Quinsy,	7
Rheumatism,	2
Scald,	1
Scirrhus of the Liver,	3
Scrofula,	5
Still Born,	92
Strangulated Hernia,	1
Small Pox,	3
Sudden,	30
Suffocation,	1
Suicide,	7
Teething,	14
Thrush,	7
Tumour,	1
Unknown Adults,	34
—— Infantile,	216
Whooping Cough,	13
Worms,	8
Total,	1545

Of the Deaths above enumerated, 389 were people of colour—of whom 332 were Free, and 57 Slaves.

The coloured population of this city, in 1820, according to the United States' Census, was 10,294 Free, and 4,357 Slaves.

By order of the Board of Health,
DANIEL HARRIS, Secretary.

STATEMENT OF DEATHS IN THE CITY OF CHARLESTON,

(South Carolina,)

For the Year 1825;

SPECIFYING THE SEXES, AGES, AND DISEASES.

Deaths in each month.	Males.	Females.	Total.	Ages.	
January,	29	21	50	Under 3 years,	219
February,	31	22	53	From 3 to 10	52
March,	25	22	47	10 to 20	47
April,	29	26	55	20 to 30	117
May,	38	22	60	30 to 40	127
June,	63	32	95	40 to 50	85
July,	43	32	75	50 to 60	56
August,	70	34	104	60 to 70	68
September,	75	37	112	70 to 80	37
October,	62	27	89	80 to 90	19
November,	33	24	57	90 to 100	7
December,	28	15	43	100 to 110	6
Totals,	526	314	840	Total,	840

The above mentioned Deaths were caused by the following Diseases and Casualties, viz:

Accident,	14	*Brought over,*	610
Angina Pectoris,	1	Hæmorrhoids,	1
Apoplexy,	9	Inflammation of the Brain,	5
Asthma,	7	—— Bowels,	3
Cancer,	5	Insanity,	7
Catarrh,	14	Intemperance,	17
Childbed,	9	Jaundice,	3
Colic,	4	Liver Complaint,	13
Cholera Morbus,	3	Locked Jaw,	6
Consumption,	152	Mænorrhagia,	1
Convulsions,	48	Old Age,	59
Cramp,	4	Palsy,	6
Croup,	16	Peripneumony,	1
Debility,	34	Pleurisy,	5
Diarrhœa,	79	Rheumatism,	1
Dropsy,	87	Scrofula,	3
Drowned,	5	Small Pox,	49
Dysentery,	6	Sore Throat,	3
Dyspepsia,	3	Spasms,	11
Epilepsy,	1	Strangulated Hernia,	3
Fever,	6	Sudden Death,	4
—— Bilious,	21	Suffocation,	2
—— Catarrhal,	6	Suicide,	2
—— Country,	28	Sun Struck,	2
—— Intermittent,	6	Swine Pox,	1
—— Nervous,	15	Teething,	13
—— Worm,	14	Thrush,	5
Gout,	1	Varioloid,	3
Hooping Cough,	5	Violence,	1
Hæmoptoe,	1		
Hæmorrhage,	6	Total,	840
Carried over,	610		

Of the above mentioned Deaths, there were,

White Males,	228	
Do. Females,	125	
Total Whites,		353
Black Males,	253	
Do. Females,	234	
Total Blacks,		487
Total Deaths,		840

Of the Whites, there were,

Natives of this State,	188
Different parts of the United States,	74
Foreigners,	91
Total,	353

By order of the Board of Health,
JAMES A. MILLER, Clerk.

REMARKS BY THE EDITORS.

In 1820, the population of Boston was	43,940
of Salem,	11,346
of the city and county of New-York,	123,706
of the city and liberties of Philadelphia,	119,325
of Baltimore,	62,738
of Charleston,	24,780

By a census, taken of the city and county of New-York, by state authority, in 1825, the population was 166,086. Assuming that the other cities, whose bills of mortality are given, have increased in the same ratio; their population in round numbers, for 1825, would be

Boston,	58,000*
Salem,	14,000
Philadelphia and Liberties,	159,000
Baltimore,	84,000
Charleston,	33,000

Proportion of Deaths to the whole population in the above mentioned cities for 1825, assuming the above numbers.

Boston,	1 in 40
Salem,	1 in 50
New-York,	1 in 33
Philadelphia,	1 in 41.7
Baltimore,	1 in 54.3
Charleston,	1 in 39.2

Proportion of Deaths by Fevers and Consumption, respectively, to the whole population.

	Deaths by Fevers.	Deaths by Consumption.
Boston,	1 in 853	1 in 263
Salem,	1 in 1400	1 in 229
New-York,	1 in 373	1 in 197
Philadelphia,	1 in 424	1 in 306
Baltimore,	1 in 626	1 in 284
Charleston,	1 in 343	1 in 217

Proportion of Deaths by Fevers, Consumption, and Cholera Infantum, to the whole number of deaths.

	Fevers.	Consumption.	Cholera Infantum.
Boston,	1 in 21.3	1 in 6.6	1 in 111
Salem,	1 in 28	1 in 4.6	1 in 140
New York,	1 in 11.3	1 in 6	1 in 33.2
Philadelphia,	1 in 10.2	1 in 7.3	1 in 18.2
Baltimore,	1 in 11.5	1 in 5.2	1 in 16.6
Charleston,	1 in 8.5	1 in 5.5	———†

*Since the above was in type, we have ascertained that the exact population of Boston, by a recent census, is 58,277.

† No deaths by Cholera Infantum, reported.

Proportion of Deaths, occurring under the age of 2 years, to the whole mortality.

Boston, - - - - - -	1 in 2.9
Salem, - - - - - - - -	1 in 4
New York, - - - - - -	1 in 3.3
Philadelphia, - - - - - - -	1 in 2.8
Baltimore, - - - - - -	1 in 3
Charleston, - - - - - - -	1 in 3.8*

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* An accurate comparison cannot be instituted between Charleston and the other cities, as the bill of mortality for that city only distinguishes children under *three* years of age.

QUARTERLY NOTICE
OF
NEW MEDICAL PUBLICATIONS.

Anatomy taught by Analysis. A Lecture introductory to the course, delivered in the Philadelphia Anatomical Rooms, fifth session, 1825–6. By John D. Godman, M. D. Lecturer on Anatomy and Surgery. Philadelphia, 1826.

Report of the Trial of an Action, Charles Lowell against John Faxon and Micajah Hawks, Doctors of Medicine, Defendants, for malpractice in the capacity of Physicians and Surgeons, at the Supreme Judicial Court of Maine, holden at Machias, for the county of Washington, June Term, 1824, before the Hon. Nathan Weston, Jun. Justice of the Court. Portland, James Adams, Jr. 1825.

This altogether is a very interesting report, and we contemplate, at a future period, presenting an analysis of its contents. At present, it is sufficient to state "that the plaintiff suffered a nonsuit, and the defendants agreed to take no cost."

An Inaugural Address delivered before the Medical Society of the State of New York, at the capitol in the city of Albany, on the 8th day of February, 1826. By James R. Manley, M. D. President of the Society. New York, printed by J. Seymour.

Introductory Lecture, delivered at the commencement of the second session of the Medical College of South Carolina. By Samuel Henry Dickson, M. D. Professor of the Institutes and Practice of Medicine. Charleston, 1826, pp. 28.

This lecture possesses no small portion of merit. The author has taken up the subject of medical education, and treated it in a manner, which proves that he has thought not only much but justly respecting it. His views are presented in an ornate, and, at the same time, neat and perspicuous manner, and deserve a wide circulation; especially as the subject of medical education is now exciting general attention in our country.

The Medical Recorder of original papers and intelligence in Medicine and Surgery. Conducted by Samuel Calhoun, M. D. No. 33. January, 1826.

The New York Medical and Physical Journal. Edited by John B. Beck, M. D., Daniel L. M. Peixotto, M. D. and John Bell, M. D. No. 16. January, 1826.

The Philadelphia Journal of the Medical and Physical Sciences, edited by N. Chapman, M. D., Wm. P. Dewees, M. D. and John D. Godman, M. D. No. 22. February, 1826.

The New England Journal of Medicine and Surgery, and the collateral branches of science. Conducted by Walter Chauncey, Jun. M. D. and John Ware, M. D. No. 1. Vol. XV. January, 1826.

The American Medical Review and Journal of original and selected papers in Medicine and Surgery. Conducted by John Eberle, M. D., Nathan Smith, M. D., George M'Clellan, M. D. and Nathan R. Smith, M. D. Vol. II. No. 2.

The characteristic of Homoöpathia, (From Hahnemann's "Geist Der Homoöpathischen heil-lehre.") By H. B. Gram, C. M. L. New York, 1825.

Whatever success the author of this doctrine and his followers may have met with in preventing scarlatina by means of the Belladonna, we are not prepared to allow him much credit for all his views, and especially for the *undue extension* he has given to his theories. The subject, however, might have been interesting to the physicians of this country, had Mr. Gram made himself sufficiently master of the English language to convey his ideas, or rather those of Dr. Hahnemann, in an intelligible manner.

Professional Reputation. An Oration delivered before the Philadelphia Medical Society, pursuant to appointment, February 8, 1826. By John D. Godman, M. D.

A catalogue of the Officers and Students of Transylvania University, Lexington, Kentucky. January, 1826.

By the above pamphlet, for which we are indebted to the politeness of our learned friend Professor Drake, we are happy to discover that the medical school of Lexington is in a most prosperous condition, and bids fair to rival in success, the oldest colleges in the union. By official returns contained in the pamphlet before us, we find that the number of pupils attending lectures this winter amounted to 282, being 35 more than during the preceding session. When we bear in mind, that the school was instituted in 1818, that the first course of lectures was delivered in it in 1819 to a class of twenty-six, we cannot help rejoicing at its rapid growth. We heartily wish it success. The chair of the theory and practice of medicine, vacated by the resignation of Doctor S. Brown, is now filled by Dr. Drake, whose former branch is now taught by Dr. Charles Wilkins Short.

A Synopsis of the Diseases of the Eye and their Treatment; to which are prefixed a short anatomical description, and a sketch of the Physiology of that organ. By Benjamin Travers, F. R. S. Surgeon to St. Thomas' Hospital. With notes and additions by Edward Delafield, M. D. Surgeon to the New York Eye Infirmary and Lecturer on Diseases of the Eye. First American from the Third London Edition. New York, Bliss & White, and Carey & Lea, Philadelphia.

Mr. Travers' work on the diseases of the eye has hitherto been known to only a few physicians in this country, and by them it has invariably been regarded as possessing great merit. We are therefore extremely happy to find, that an American edition of it has been published in New York, with notes and additions by Dr. Delafield, of that city; a gentleman who has already acquired a merited reputation, as a practical oculist. The plates are extremely well executed, and in point of typography and paper, the American publisher seems to have spared no pains or expense to render the work worthy of extended patronage.

The Study of Medicine, by John Mason Good, M. D., F. R. S., F. R. S. I. &c. &c. &c. In Five Volumes. Fourth American Edition, reprinted from the last London Edition, greatly improved and enlarged. Boston; Wells & Lilly. 1826.

Dr. Good must undoubtedly be much gratified at the great success the work has met with in this country, especially when he takes into consideration the number and the large size of the volumes. In the present edition, the work has been enlarged by the addition of a whole volume, by which means the very erudite author has been enabled to introduce many interesting subjects, hitherto unavoidably omitted, and to avail himself more largely of the experience of continental physicians.

Much credit is due to the American publishers, for the excellent manner in which this edition is got up. Despising, as we do, the practice so common in this country, of publishing *cheap* copies of Medical works, printed with small, compressed types, and on the worst paper, we must hail with pleasure the appearance of a publication possessing a very different character. In the edition before us, the marginal notes so necessary in a work of the sort, and which, for the sake of *economy*, had been left out in all the former editions printed in this country, have been retained. This alone is sufficient to ensure this edition a more extensive circulation.

NOTICE TO CORRESPONDENTS.

The interesting account of the Epidemic of 1825, at Natchez, Mississippi, has been received.

The papers on the Varioloid Epidemic of this city, in 1824, and on a peculiar Gangrenous Sore Mouth in children, were not in readiness for the present number: A handsome coloured engraving of the varioloid eruption on the skin and on mucous surfaces, already prepared for the former paper, is therefore unavoidably postponed.

Authors desirous of their publications being noticed in this work, are requested to forward them, free of all expense, to the Agent.

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